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Rim-Paunina Project

and

Forest Plan Amendments

Record of Decision

Crescent Ranger District, Deschutes National Forest,
Klamath County, Oregon

Townships 25, 26 South and Ranges 7, 8, 9 East
Willamette Meridian

Figure 1. Location of the Rim-Paunina Project Area

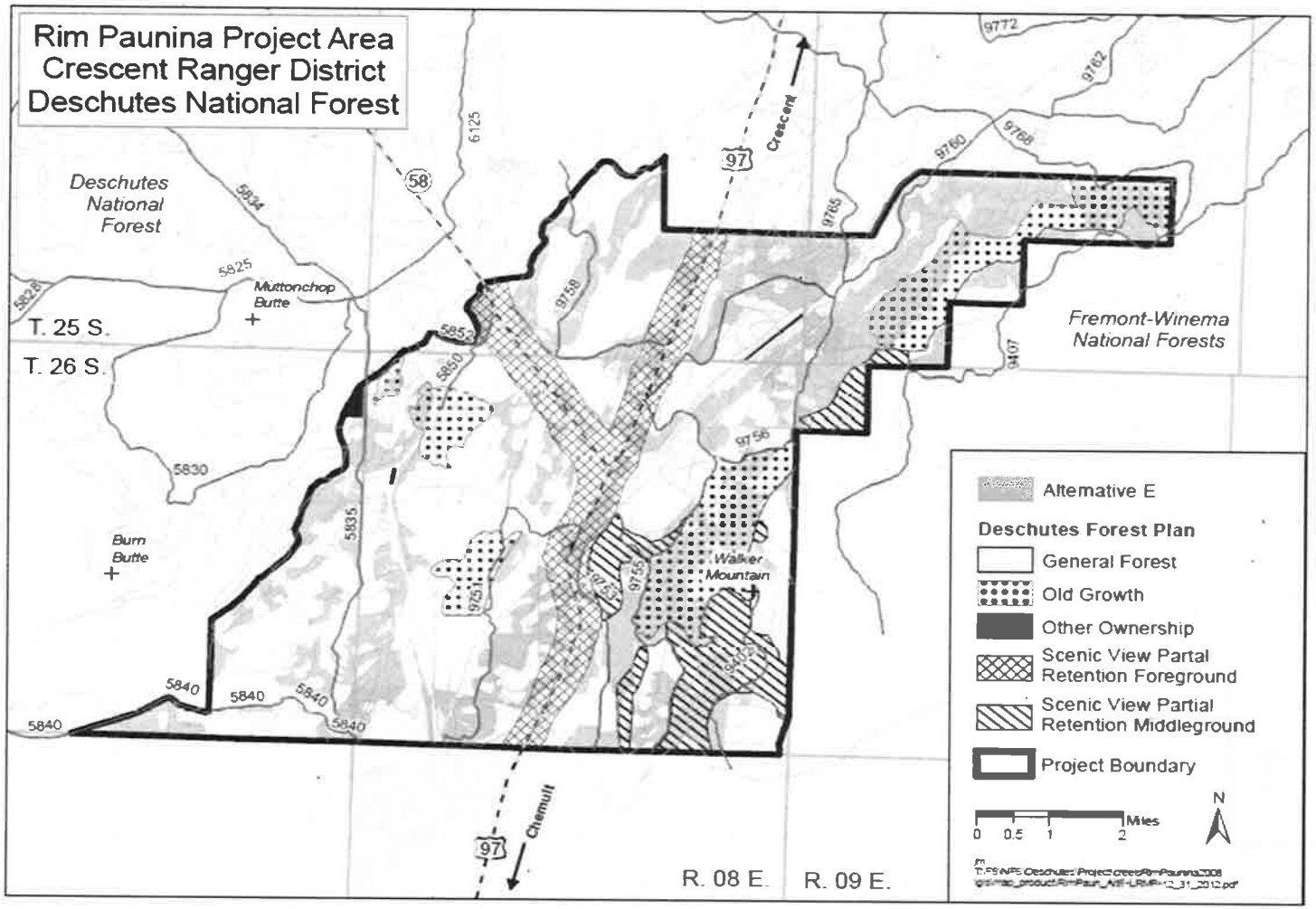

Figure 2. Deschutes National Forest Land and Resource Management Plan Allocations within the Rim-Paunina Project Area

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Project Background

The Rim-Paunina project area is approximately 40,000-acres, and bordered by the new Gilchrist State Forest to the north and the Fremont-Winema National Forests to the south and east. It is mostly comprised of ponderosa and lodgepole pine forests with some dry mixed conifer on Walker Rim. Well-intentioned management actions in the past, such as fire exclusion and salvage of insect-killed lodgepole pine, have reduced habitat diversity in the area for a special segment of wildlife called Management Indicator Species (MIS). These species have evolved on a landscape which developed through various disturbance processes such as low-intensity and frequent fires in ponderosa pine, and events that maintained lodgepole pine in a range of conditions from single story to dense and multi-story forest. The Deschutes National Forest Land and Resource Management Plan (Forest Plan) has designated these species as MIS because their welfare is used as a benchmark against which other species dependent upon similar habitat conditions is measured. In the Rim-Paunina area, the Management Indicator Species of focus are white-headed, black-backed, and three-toed woodpeckers; accipiter hawks (small to medium low-flying and agile hawks); big game (deer and elk); and American marten.

Approximately 40 percent of the project area is lodgepole pine that currently provides little habitat for the black-backed and three-toed woodpeckers and marten due to a mountain pine beetle outbreak in the 1980s. Subsequent management actions at the time extensively salvaged the dead and down trees. Much of the area currently has minimal overstory trees but has a dense layer of understory that has regenerated. Currently, stand complexity in lodgepole pine is considered low and is not providing optimum habitat for many wildlife species of focus. Utilizing management techniques to vary the tree densities, optimizing tree growth, and even passively managing (no action) some stands will ultimately benefit target species. These actions will lead to more complex structure and historical range of conditions, benefiting species in the short- and long-term.

Management Direction

The 1990 Deschutes National Forest Land and Resource Management Plan (Forest Plan), as amended, guides all natural resource management activities and provides standards and guidelines for the Deschutes National Forest and thus the Rim Paunina Project. The project area is comprised primarily of Management Area M8 - General Forest (28,344 acres), with some additional acreage in M9 – Scenic Views (6,844 acres) and M15 – Old Growth (5,043 acres).

Decision Summary and Rationale

This Record of Decision (ROD) documents my decision and rationale for the selection of **Alternative E**, described in the January 2013 Final Environmental Impact Statement (FEIS) titled *Rim-Paunina Project*. My decision is to select Alternative E in its entirety, including the associated resource protection measures, mitigation measures, and monitoring starting on page 71 of the FEIS. My conclusion is based on a review of the record, which shows a thorough evaluation of relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or

unavailable information, scientific uncertainty, and risk. I considered how each alternative meets the stated purpose and need and complies with applicable laws, regulations and policies. I have also considered the public and agency comments, including all relevant science, submitted in response to the 45-day comment period. At the end of Response to Comments (FEIS Appendix E) is a table that describes how I considered additional science presented during the comment period (FEIS Appendix F).

In summary, this decision includes:

Commercial Harvest	**11,236 acres**
Density reduction thinning (HTH)	5,244 acres
Improvement cutting (HIM)	4,028 acres
Alternative Mistletoe treatment	1,921 acres
Aspen Restoration treatment	43 acres
Prescribed Fire	**13,491 acres**

The project is needed because the gap between the current habitat condition and that which is needed on the landscape for certain Management Indicator Species (MIS) is considerable. One of my desired outcomes for treatments with this project is to increase habitat for species such as the white-headed woodpecker that need large diameter, open ponderosa pine stands with reduced levels of understory and brush to reduce nest predation. With this decision, I also want to address the gap-in-time for large trees (those over 21 inches) to replace those lost by severe dwarf mistletoe infection. The current levels of dwarf mistletoe infection combined with overcrowding and competition of the larger ponderosa pine trees has led to a mortality level that is projected to increase faster than the larger trees can develop. All the action alternatives treat the same amount of acres (2,593) of severe dwarf mistletoe infection; however, the projected effectiveness for creating large diameter trees in the long-term for white-headed woodpecker habitat is most evident in the method utilized in Alternative E.

Alternatives B and C use density control and prescribed burning that will be effective in light and moderately mistletoe-infected stands; however, they do not contribute to breaking the cycle of infection in the severely infected stands. Both Alternatives D and E treat severely infected dwarf mistletoe stands, primarily along the base of Walker Rim, with different prescriptions designed to be more effective at aiding the development of large trees. Alternative D partially addresses severe mistletoe infection by creating 2-5 acre openings (778 total acres) where all trees, including those over 21 inches will be removed to help break the cycle and where removal of the infected overstory will create openings in which the understory can become established disease-free. However, Alternative E will create a mosaic pattern of openings in 1,921 acres of the most severely infected dwarf mistletoe stands, and is projected to be the most effective at addressing severe mistletoe infection (FEIS, pg. 362). None of these openings will exceed the Deschutes Land and Resource Management Plan Standards and Guidelines (TM-58) of 40 acres in size nor will any trees over 21 inches in diameter be harvested. These variable-sized openings are needed to create disease-free pockets and start the forest along the base of Walker Rim on the trajectory back towards the historic range of variability that included open stands of large diameter disease-free ponderosa pine trees. My decision also includes planting of ecologically appropriate species of conifers that would not be susceptible to mistletoe infections in the created openings. I also recognize the importance of retaining some level of dwarf mistletoe on the landscape, as some species (Johnson's hairstreak, goshawk, great grey owl, and American marten) utilize the dwarf mistletoe brooms for habitat and as a food source. This decision is not intended to eradicate mistletoe from the landscape entirely, but instead will alleviate the impacts of severe mistletoe infection on the ability of large trees to develop.

I realize that fulfilling Purpose and Need #1 for this project to create a variety of stand structures and compositions on the landscape is inherently a balancing act, as what is beneficial for one species is not necessarily good for another and many species utilize a mix of forest stand conditions. For example, species such as the white-headed woodpecker and goshawk both utilize the large diameter ponderosa pine stands; however, white-headed woodpeckers prefer open stands while the goshawk favors a more dense stand condition. Other accipiters (sharp-shinned hawk and Cooper's hawk) utilize more open stands for foraging but prefer dense stands of small diameter ponderosa pine for nesting. Black-backed woodpeckers prefer larger diameter lodgepole for nesting but feed in small diameter denser stands where insects are more prevalent. Alternative E provides this balance, retaining some dense ponderosa pine stands (88 acres) and some decadent lodgepole pine stands (712 acres) compared to the proposed action, in addition to creating more open stand conditions.

Alternative E also includes management within Old Growth Management Areas (OGMAs), including density reduction and addressing severely infected dwarf mistletoe stands on Walker Rim. I have considered OGMA management direction from the Forest Plan and explored the benefits and drawbacks of management in these areas. I have decided that the proposed treatments are in line with Standard and Guideline M15-4, to perpetuate or enhance old growth characteristics, and that these treatments are necessary to support the development of large trees and old-growth characteristics in these stands in the long-term. Reducing density and alleviating severe mistletoe infection will allow the currently uninfected trees on-site to obtain more resources (water, nutrients, etc.), grow larger, and more fully meet the intent of management in MA-15 (old growth), as outlined in the Forest Plan.

My decision seeks to manage snags and down wood habitat at various densities across the landscape based on Forest Plan standards and the historical range of variability as described in the FEIS. In addition to following Eastside Screens direction to move toward the Historical Range of Variability (HRV) for Late and Old Structure (LOS) (through removal of mistletoe infection which currently is impeding development of LOS), the Alternative Mistletoe treatment in Alternative E will create snags following project design criteria as well as move the landscape for ponderosa pine habitat types toward HRV. Management of landscape HRV is based on the best available science concerning snag levels and MIS and TES wildlife species habitat preferences. The Rim Paunina project as a whole will result in snag conditions moving closer to HRV over time.

The best available science on dead wood relationships to wildlife habitat was compiled in the form of DecAID and local data sets. DecAID was not used to set snag levels for the Rim-Paunina Project. The project area is deficient in high density snags in the Ponderosa pine/Douglas-fir habitat type for the diameter classes "greater than or equal to 10 inches" and "greater than or equal to 20 inches" (FEIS pg. 109). For this reason, all existing snags will remain on the landscape except where they must be felled for temporary road construction, log landings, or occupational safety. Except in areas designated for personal use firewood, the intent is to retain all existing levels of down wood eight inches and greater in lodgepole pine and nine inches and greater in all other Plant Association Groups (diameter at small end). Only activity-created slash below these maximum diameters will be piled and utilized or disposed (FEIS, pg. 76).

Reintroduction of a frequent fire regime in 13,491 acres of appropriate stands within the project area is an important component of this alternative as treatment which will help restore conditions to a more historic low intensity frequent fire interval for dry eastside forests. Alternative E includes 4,985 more acres than Alternative B of prescribed fire, and 729 more acres than Alternatives C and D. This acreage includes 1,205 acres which will have small diameter thinning (up to 8 inches in diameter), pruning of trees limbs and hand piling activities conducted before prescribed burning, and 3,780 acres of slashbusting/brush mastication and prescribed fire in stands that are ready for a frequent fire regime without timber harvest or small diameter thinning.

In order to restore much of the ponderosa pine stands to a condition that allows a frequent, low-intensity fire regime I also considered the effects that thinning and prescribed fire will have on big game cover. Current big game cover on the landscape was assessed and designed for this project to be placed in the most logical and functional places where it can be sustained. In those subwatersheds that were most deficient, passively-managed patches or "retention areas" were increased above 15 percent in activity units to maintain a minimum of 30 percent hiding cover across the subwatershed. These retention areas will also provide more suitable habitat for other density-dependent Management Indicator Species (MIS) besides big game.

Finally, as part of my desire to create a variety of stand structures similar to historic conditions, my decision also includes a small amount of aspen regeneration treatments. Unit 621 is a 43 acre unit containing two small ephemeral draws which, under a historical fire regime, would have had a much larger hardwood component. Currently, due to encroaching stands of dense conifers these aspen are being crowded out. I want to restore these areas back to hardwoods by creating five openings, up to two acres in size, in these two small draws with a moist microclimate where all conifers less than 21" in diameter will be removed. Regeneration may be assisted by a variety of ways such as prescribed fire, root cutting, or planting with protection provided by wood, metal or plastic fences until the crown is above the area susceptible from browsing from large ungulates.

My selection of Alternative E also provides the balance between Purpose and Need #1 and #2 for this project that I am striving for. In response to Purpose and Need #1 it will decrease the density of stands, thus promoting a more resilient forest, reduce the overall acreage of severely dwarf mistletoe-infested pines while retaining some mistletoe on the landscape for those species that utilize it, and, by utilizing a combination of thinning and prescribed fire, create a mosaic pattern that will mature into the large diameter open ponderosa pine stands that are preferred by white-headed woodpeckers.

In response to Purpose and Need #2, it provides a substantial amount of timber and wood fiber products to the local economy. Alternative E is estimated to produce approximately 24.1 Million Board Feet (MMBF; 48,200 CCF), of which approximately 70 percent would be in "saw logs". This amount of timber is expected to create or retain approximately 410 jobs over the next 3-7 years as the timber is harvested and processed. These jobs will be created throughout the product chain - in the woods through harvesting, at the mills through processing, and on the roads through transport of logs and finished products. Job growth from this type of economic infusion is also expected to beneficially impact all sectors of the rural economy in those communities that support and rely on a strong wood products industry. Additionally, a number of units are designated for personal use firewood collection post-harvest, which will help create a stable supply of this wood product to the local communities. Biomass utilization will also be considered as well as other products such as chips and post and poles. Finally, my decision includes the construction of approximately 8.3 miles of temporary roads, which will be restored after use is completed.

Forest Plan Amendments – Harvest in Late and Old Structure (LOS) and Prescribed Fire in Scenic Views over Five Acres

Non-significant Forest Plan Amendments are allowed under the the Forest Service Land and Resource Management Planning Manual (Forest Service Manual 1926.51) and can result from "Adjustments of...management prescriptions resulting from on-site analysis when the adjustments do not cause significant changes in the multiple-use goals and objectives for long-term land and resource management plans." My decision includes amending the 1990 Deschutes National Forest Land and Resource Management Plan with two site specific amendments.

First, Interim Wildlife Standard 6(d) from the Regional Forester's Forest Plan Amendment #2 (Eastside Screens), which states "*...Do not allow timber harvest activities to occur within LOS stages that are BELOW HRV",* will be amended. In a letter dated June 11, 2003, the Regional Forester encouraged Forest Supervisors to consider site-specific Forest Plan amendments associated with increasing the number of large trees and LOS on the landscape. Alternative E includes commercial treatments (thinning, improvement cuts, and mistletoe treatment) on 619 acres of mixed conifer single-stratum LOS which is currently below HRV. These are areas where the development of large trees is currently impeded, or existing large trees are at risk from fire or insects and disease. The objective of these treatments is to improve conditions for the development and/or maintenance of large trees, thus retaining or enhancing LOS acreage in the long-term. There will be no loss of LOS acreage with this amendment.

The second amendment to the Forest Plan is to Standard and Guideline M9-90, which states "*...In foreground areas, prescribed fires will be small, normally less than 5 acres, and shaped to appear as natural occurrences."* The amendment will allow low intensity prescribed fire in blocks exceeding five acres within foreground scenic views on 468 acres, of which 162 acres in seven units will be visible from Highways 97 and 58 and will make visible the effects of prescribed burning to passing motorists. I believe the treatments are necessary to meet the goal of wildfire risk reduction, as well as to improve the scenic views of large ponderosa pines just off the roadside in the long-term. To maintain scorching below the 30 percent of crown, I have adopted the following design mitigations for treatments in these areas:

- If stand density is too dense to burn without substantial mortality, thinning with follow-up slash pile and burning will be conducted.
- If shrubs are present and stand density is low, slash busting would be followed with prescribed burning. Some mortality could occur.
- If stand density is low and no shrubs are present, the area would be assessed to determine if treatment is needed.
- To achieve underburning objectives, more than one season of burning may be necessary.

I have determined these amendments to be insignificant based upon the analysis for determination of significance starting on page 518 of the FEIS. These changes are very small in contrast to the 1.6 million acres of the Deschutes National Forest and they will not alter the long-term relationship between levels of goods and services projected by the Land and Resource Management Plan. They do not set precedence and only apply to this project.

Proposed Amendment and Evaluation of Significance
There will be no change in the long-term relationships between the levels of goods and services projected by the Deschutes National Forest Plan FEIS from the impacts of implementing either Forest Plan Amendment for Alternative E. These amendments apply only to this project and will not apply to future decisions within the project area. The amendments do not alter the desired future condition of the land or resources or the anticipated goods and services to be produced. Only a small amount of acreage will be treated and options for future management will be maintained. Accordingly, I have reviewed my decision against the Deschutes Land and Resource Management Plan (Forest Plan) direction and I find this decision to be consistent with the long-term objectives as discussed in the Forest Plan as amended.

Purpose and Need

Given this current condition in the project area, as well as the desire for an emphasis on multiple-use management, a dual purpose and need was developed for the Rim-Paunina project:

Purpose and Need Statement #1: *There is a need to decrease the density of trees to provide a variety of stand structures and compositions appropriate to the Rim-Paunina biophysical environment in order to increase resilience and provide habitat for a variety of species (flora and fauna) across the landscape now and in the future.*

Most of the stands currently are in a condition where there are too many trees competing for light, water, and nutrients and this puts the large trees at risk. Thinning is needed to reduce competition and make the large trees more resistant to disturbance events. In addition to competition, many of the stands along Walker Rim are heavily infected with dwarf mistletoe, which spreads laterally one to two feet per year (Hawksworth 1996) thus reducing the percentage of trees that will eventually develop into large mature pines (FEIS Tables 107 and 108). It is these large diameter open ponderosa pine stands that are the most suitable habitat for white-headed woodpecker, and their development was the driver for Key Issue #2 (addressing severe mistletoe infection). Historically, frequent low intensity fires kept the dwarf mistletoe in check by reducing the amount of infected understory. I considered a variety of methods for treating dwarf mistletoe infections. Clearcutting has been documented as the most effective way to manage mistletoe (Edmonds et al. 2011); however, clearcutting such a large area is not a viable management option for this project, as I want to balance the need for disease-free areas along with retaining some dwarf mistletoe. Certain species (Johnson's hairstreak, goshawk, great grey owl, and American marten) utilize the dwarf mistletoe brooms for habitat and as a food source. My selection of Alternative E will treat 1,921 acres for severe mistletoe infection, removing all infected trees under 21 inches in diameter and then using alternative methods (such as burning or topping) to hasten the mortality of the infected overstory trees over 21 inches. As the snag analysis in the FEIS (pg. 109) shows, the project landscape is currently at a deficit for large snags, so I have chosen as part of my decision to leave these large snags (those over 21 inches in diameter) on the landscape. I realize that some of the severely infected stands overlap Old Growth Management Areas (OGMAs). To promote the retention and enhancement of old growth characteristics in M15 – Old Growth (S&G M15-4), those structurally advanced trees exhibiting fire and drought resistance within that overlap will be retained, regardless of size.

Purpose and Need Statement #2: *There is a need to contribute to the local and regional economies by providing timber and other wood fiber products now and in the future.*

The Deschutes Land and Resource Management Plan recognizes the need for forest products from forest ecosystems and the need for a sustainable supply of timber and forest products that will help maintain the stability of the local and regional economies on a predictable and long-term basis. This is especially true in the M8 – General Forest Management Area which comprises the majority of the project area, in which timber production is to be emphasized (Forest Plan, pg. 4-117). The Rim-Paunina FEIS describes the need to provide wood products to meet public needs and contribute to the health of local and regional economies. Timber harvest (lumber and wood products) and road work (temporary road construction and reconstruction) associated with the Rim-Paunina project will affect employment and income in three ways: (1) direct effects attributable to employment associated with the harvesting, transportation, and manufacturing; (2) indirect effects attributable to industries that supply materials, equipment, and services to these activities; and (3) induced effects attributable to personal spending by the owners, employees, families, and related industries. Alternatives B, C, D and E propose commercial harvest activities that will contribute to the local, regional, and State economies.

Alternative E is estimated to produce approximately 24.1 Million Board Feet (MMBF), of which approximately 70 percent would be in "saw logs." The estimated 410 jobs this creates or supports will occur over several (3 to 7) years as timber is harvested and processed. Over half of the direct jobs

supported by the harvesting, transporting, and processing of timber are associated with the primary manufacturing. The Interfor Pacific mill in Gilchrist, Oregon is the closest local primary lumber manufacturer to the project area.

Biomass utilization will also be considered as approximately 20 percent of the volume in ponderosa pine and 40 percent in lodgepole pine is attributable to "other" products such as biomass, chips, post and poles, and firewood. There are few local markets for fiber beyond JTS animal bedding material in Redmond; therefore, most chips are either processed in LaPine and go on to secondary markets, or are trucked directly to Roseburg, Oregon or White City, Oregon.

Key Issues and How Alternative E Responds

In response to the Proposed Action, the public and the Forest Service identified four key issues. These issues were then used to develop alternatives to the Proposed Action. Following is a summary of how Alternative E, the preferred alternative, addresses these key issues. More information can be found in "Alternatives Considered in Detail" in Chapter 2 of the FEIS.

Key Issue #1: The proposed action strives to use ground-based silvicultural techniques and prescribed underburning to return ponderosa pine in ponderosa pine and mixed conifer plant association groups to a more open condition. This action would move landscape conditions more toward what was seen historically and tend to favor species such as the white-headed woodpecker that prefer this type of habitat. However, these treatments and resultant habitat conditions are less desirable for other species such as accipiter hawks and big game that tend to favor denser, often multi-layered stands.

How Alternative E Responds to Key Issue #1

In response to Key Issue #1, Alternative E provides more of a balance of habitat for both Management Indicator Species that prefer open ponderosa pine stand conditions and those that prefer more dense conditions. Large diameter ponderosa pine stands are utilized by many species, with the white-headed woodpecker preferring open stands and the goshawk favoring a denser stand condition. Other accipiters (sharp-shinned hawk and Cooper's hawk) utilize more open stands for foraging but prefer dense stands of small diameter ponderosa pine for nesting. Thus, compared to the Proposed Action, Alternative E drops 88 acres of treatment in ponderosa pine stands, retaining them in a dense, multi-story condition.

The Viable Ecosystems model was used to model species habitat in the short and long-term and after the analysis was completed changes to the species habitat in the short- and long-term were not as great as expected. For the white-headed woodpecker there will be an increase of 610 acres of potential nesting habitat by 2018 and an additional 45 acres by 2058. For the accipiters (goshawk, Cooper's and sharp-shinned hawk) the nesting habitat will decrease in 2018 because the treatments will open the stands. By 2058 the available nesting habitat for accipiters will triple from current conditions as stands will slowly become denser.

The Deschutes Land and Resource Management Plan specifies a minimum retention hiding cover level of 30 percent for big game. Forest management activities (tree removal and prescribed burning) in Alternative E will not drop any subwatersheds in the project area below this level, although opening of the stands will result in increased visibility and loss of hiding cover in the short-term. Mitigation measures have been included to place no-treatment retention areas that currently function as hiding cover next to open roads and/or motorized trails. Additional measures include increasing retention from 15 to 30 percent where cover is light, and creating "islands" to be protected during prescribed burning operations for the benefit of big game, small mammals, and songbirds.

***Key Issue #2*:** The proposed action recognizes the diminishing amount of suitable habitat for ponderosa pine-dependent wildlife species such as the white-headed woodpecker. However, a considerable portion of the ponderosa pine-dominated stands are heavily infected with dwarf mistletoe in all size classes. In these stands, actions described in the proposed action may only provide marginal white-headed woodpecker habitat in the short term. In the long term, mortality of the overstory trees and their replacement creates a gap-in-time that can span decades before larger trees are available.

How Alternative E Responds to Key Issue #2
Alternative E was developed to provide a more effective approach to addressing the gap-in-time where large trees are absent from the landscape. In the most severely dwarf mistletoe-infected stands this alternative will remove all infected trees under 21 inches in diameter and then use alternative methods to hasten the mortality of the overstory, retaining all trees over 21 inches on-site. This will occur on 1,921 acres.

Of the action alternatives, Alternative E was predicted to be the most effective (FEIS, pg. 362) at treating dwarf mistletoe. Alternatives B and C address mistletoe infection only through thinning, and do not specifically address more severe levels of infection. Alternative D addresses severe infection by proposing 2-5 acre openings across 30 percent of approximately 2,593 acres where all trees (including those over 21 inches in diameter) would be removed to break the cycle of continual infection and allow the understory to become established disease-free. However, this would still be less effective at removing and keeping severe mistletoe infection off the landscape than the application of the alternative mistletoe treatment in Alternative E. Across 1,921 acres, the Alternative Mistletoe treatment in Alternative E creates various size openings in the most severely infected stands and hastens the mortality of those trees over 21 inches while retaining them in place. Alternative E will remove the overhead dwarf mistletoe seed source while still retaining large snags on the landscape, and will address the gap-in-time where large trees would be absent from the landscape. In addition, it will balance the need for disease-free areas with retention of some dwarf mistletoe for certain species (Johnson hairstreak, goshawk, great grey owl, and American marten) that utilize the dwarf mistletoe brooms for habitat and as a food source.

***Key Issue #3*:** The proposed action would use silviculture techniques to manage lodgepole pine stands to develop future black-backed woodpecker nesting habitat, but did not provide a proper balance for short-term and long-term conditions. Currently, some of these stands also serve as suitable habitat for the black-backed woodpecker, marten, and big game.

How Alternative E Responds to Key Issue #3
Alternative E responds to Key Issue #3 by dropping 712 acres of treatment decadent lodgepole pine stands (in comparison to the Proposed Action). This retention will provide more of a balance between short-term habitat maintenance for Management Indicator Species such as the black-backed woodpecker and the marten, and long-term habitat creation for black-backed woodpecker.

For marten, Alternative E increases the potential habitat 508 acres by 2018 from the existing condition and triples the long-term habitat by 2058 to 11,375 acres in the project area. For the black-backed woodpecker there is a loss of 665 acres from the current condition by 2018; however, by 2058 potential habitat is projected to increase by 2,986 acres to 24,299 acres across the project area. In addition, at least 15 percent of each activity unit will be managed in a passive scenario, and these untreated acres will provide additional nesting habitat where appropriate structure exits.

***Key Issue #4*:** The proposed action did not go far enough in the application of prescribed fire in the project area. Currently, there are several thousand acres of relatively open pine stands that are mostly single story with a brush component that is not in a desirable condition favored by the white-headed

woodpecker for nesting habitat. With minimal investment, these stands could be returned to a condition of readiness for the return of a frequent fire regime more in line with their historical condition.

How Alternative E Responds to Key Issue #4
By treating 13,941 acres within the project area with prescribed fire, Alternative E goes the farthest of the five alternatives in reducing fire risk, rate of spread, and flame length based on modeling (see Table 122 and Figure 97, FEIS, pg. 389). This is due to the scope and placement of treatment activities designed to modify fire behavior, especially towards the subdivisions to the northwest on private lands, the Gilchrist State Forest to the north and east of the project area, and along Walker Rim which contains two Old Growth Management Areas. Alternative E is intended to reduce surface fuel loading, break up fuel continuity, reduce ladder fuels, and set the return to a maintenance burn cycle that mimics the more historic low intensity fire cycle of 8-15 years in dry eastside forests.

Alternative E includes treatment of 8,506 acres where prescribed underburning will occur after disposal of activity-created slash and 1,205 acres where prescribed underburning will occur after small diameter thinning, handpiling, and disposal (if needed) on Walker Rim. Several of these units along the Rim are over 30 percent slope, thus treatments will include hand felling trees up to eight inches in diameter and pruning to a height of eight feet or one-third the crown height. Then, a low-intensity fire will be carefully applied. There are an additional 3,780 acres which will receive prescribed fire after slashbusting/brush mastication treatment in stands that are ready for a frequent fire regime without need for timber harvest or small diameter thinning. However, I recognize the importance of leaving downed wood for various wildlife species, and have thus incorporated Project Design Features intended to manage for the retention of down wood in all Plant Association Groups to meet Forest Plan standards (FEIS Table 13, pg. 77).

Reviewing Alternative E and its Likely Effects
In making this decision, I carefully considered the environmental and social consequences and the potential cumulative effects associated with this project in the short- and long-term. I also used the resource specialist reports and cited science as a factor in my evaluation of the following resource areas:

Wildlife (FEIS, pg. 96)
There is an extensive and robust analysis of the alternatives for over 60 species in Chapter 3 of the FEIS. Effects vary by species and habitat.

For Threatened and Endangered and Federal Candidate species; Alternative E would have **"No Effect"** on the northern spotted owl and northern spotted owl critical habitat or the Gray Wolf, and **"No Impact"** on the Oregon spotted frog and North American wolverine. Alternative E would result in a determination of **"May impact individuals or habitat, but would not likely contribute to a trend toward federal listing or cause a loss of viability to the population or species"** for the Pacific fisher.

For the Regional Foresters Sensitive Species, Alternative E would result in a determination of **"Beneficial Impact"** to the Lewis' and white-headed woodpeckers, and a **"May Impact Individuals or Habitat, But Would Not Contribute to a Trend Toward Federal Listing or Loss of Viability To The Population or Species"** for the Johnson's hairstreak.

Regarding the Presidential order (Executive Order 13443) related to hunting opportunities, the selection of Alternative E would result in no loss of hunting land acreage within the project area and motorized hunting access (based on the Cooperative Management Agreement between the Forest

Service and Oregon Department of Fish and Wildlife known as the Walker Rim Green Dot system of roads) will remain unchanged during hunting season. In the subwatersheds that have low levels of hiding cover, (due to presence of wildlife connectivity corridors, cultural heritage sites, large rock outcrops etc.) I have adopted mitigation measures to increase the level of untreated retention areas from 15 to 30 percent.

Management Indicator Species (FEIS, pg. 164)
Given the effects described in the FEIS, Alternative E does not contribute to a downward trend for any Management Indicator Species viability at the Forest level. I am aware of the recent court cases regarding Management Indicator Species and I have reviewed the effects for those species. These species were identified and selected under the Deschutes National Forest Land and Resource Management Plan because their populations are believed to be most influenced by forest management. The analysis used the best available science approach for reliable and accurate information on defining the quality and quantity of habitat. Alternative E provides clear benefits to these species such as white-headed woodpecker, in both the short and long-term. Thinning followed by underburning will open these stands, reduce competition among the remaining large trees allowing them to increase in size, while at the same time reducing the understory and brush component to reduce nest predation. Snags are also an important component of the landscape, and the alternative mistletoe treatment will induce mortality in severely infected dwarf mistletoe trees over 21 inches. This will eliminate the mistletoe infection while retaining the trees on site and create a pulse of snags from the AltMist treatments in Alternative E.

Treated units will have lower snag recruitment over 40 years compared to the no-action alternative. The difference will be approximately three snags per acre less in the "greater than or equal to 10 inch diameter class" in Eastside Mixed Conifer (EMC) and ponderosa pine/Douglas-fir (PP/DF) habitat types (this does not include the snag pulse created from the AltMist treatment in Alternative E). This lower recruitment is due to the stands becoming healthier and more resilient to disease, insects and fire events. The difference is less than half a snag per acre in Lodgepole pine in the "greater than or equal to 10 inch diameter class". In the "greater than or equal to 20 inch diameter class" PP/DF will have approximately one snag per acre less and all other habitat types will have less than a half a snag per acre difference.

I realize that certain Management Indicator Species, such as black-backed woodpecker and American marten utilize denser forest habitat such as that being opened up in this project; however, by selecting Alternative E some of these denser stands will be retained as compared to the Proposed Action (Alternative B).

Old Growth Management (FEIS, pg. 307)
There are five designated Old Growth Management Areas (OGMAs) within the Rim-Paunina project area (Little Deschutes River, Railroad, 9751, Walker Mountain, and Walker Rim) totaling 5,043 acres. All five of these OGMAs are outside the range of the Northwest Forest Plan and are lands managed with *Interim East-side Screen* direction. In Alternative E there will be a total of 2,664 acres of active vegetation management within these five OGMAs. It includes 1,523 acres of fuels treatments, 280 acres of Alt. Mist. treatment, 39 acres of aspen restoration, and 822 acres of thinning utilizing improvement cuts or thinning from below. I believe these treatments are necessary to reduce density and alleviate severe mistletoe infection, thus supporting the development of large trees in these stands and enhancing their old growth characteristics in the long-term (S&G M15-4).

Alternative E includes 285 acres of thinning within LOS connectivity corridors. I realize that thinning will reduce the overall canopy cover, but it will still remain within the top third of site potential depending on the plant association and site specific conditions, and will result in a more open

condition favorable to some species that prefer less canopy. It will provide adequate cover and structure to facilitate travel by species who utilize corridors, promote the development of larger diameter trees by reducing of the competition for scarce resources, and promote forest resilience where actively managed as well as provide for long-term habitat conditions within the corridors. Underburning will be limited as I want to ensure there is multi-story canopy layering and shrubs for small mammals, song birds, and browse for big game.

There will be no new roads or temporary roads constructed within any OGMA and thus this project is consistent with the Standard and Guideline that calls for the minimum standard and density needed to meet the objectives of the management area (M15-14).

Forested Vegetation (FEIS, pg. 340)
Commercial harvest will be accomplished by ground-based tractor systems. Areas identified as tractor logging are areas where heavy equipment, such as logging tractors/skidders, will be used to remove a commercial product. Prescriptions include 5,244 acres of thinning, 4,028 acres of improvement cuts, 1,921 acres of alternative mistletoe treatment and 43 acres of aspen restoration. Noncommercial thinning (thinning of small diameter trees without associated commercial harvest and aspen thinning) will occur on 1,205 acres.

The Rim-Paunina project area has severe infections of Western dwarf mistletoe (*Arceuthobium campylopodum*) which occurs in ponderosa pine and lodgepole pine dwarf mistletoe (*Arceuthobium americanum*). Historically, fire kept the spread of mistletoe under control but with the fire suppression of the past 100 years it has become prevalent as the older overstory infects the emerging understory. A walk through survey identified approximately 5,600 acres where dwarf mistletoe could impede development or maintenance of LOS, including 3,000 acres on Walker Rim. Open stands are important for white-headed woodpeckers and ensuring long-term survival of large diameter trees is important. Alternative E is projected to be the most effective at addressing severe mistletoe infection (FEIS, pg. 362), as is will remove all infected trees under 21 inches in diameter across 1,921 acres.

Alternative E is projected to maintain or increase in the long-term the amount of LOS across the project area. While a Forest Plan amendment is being used to treat 619 acres in mixed conifer single strata (currently below HRV), in the long run these treatments will shorten the gap-in-time large trees are absent from the landscape and improve conditions for the development of healthy large trees. They will also increase stand resiliency to insects, disease and wildfire. All treated areas will remain in LOS condition with no net loss of LOS.

Fire and Fuels Management (FEIS, pg. 367)
My review of the analysis file, including science and comments provided by the public, indicates that that commercial harvest, noncommercial thinning, and prescribed fire activities work in concert to reduce stand densities, reduce the amount of and change the arrangement of fuels, and decrease the risk of high-intensity wildfire. I have concluded that reducing fire risk is an important and necessary course of action relative to the purpose and need of this project. Prescribed fire treatments of natural and activity fuels will reduce the amount of fuels in the project area and Alternative E affords the greatest risk reduction of all the alternatives, based on fire modeling and implementation activities (FEIS, pg. 389-390) on a total of 16,221 acres and returns a frequent low intensity fire regime to 13,491 acres.

All thinning that will be implemented under this decision will be size class and species-specific; the largest, most fire-resistant trees will be retained on the landscape and species composition will be moved toward fire-tolerant species such as ponderosa pine. Prescribed fire will be applied in the appropriate stands to reduce concentrations of dead and downed wood and accumulated brush, but

more importantly to re-introduce fire into fire-dependent ecosystems. Fire will also be re-introduced into appropriate stands where there is no commercial harvest activity, mostly on Walker Rim where the slope exceeds 30 percent. Prework will include hand felling of trees up to eight inches in diameter, lower limb removal (pruning), fireline construction at the project perimeter, around control units, and wildlife leave areas.

Soil Quality (FEIS, pg. 393)
I have determined that all activity areas proposed for commercial timber harvest and non-commercial thinning meet the criteria for land suitability using criteria affecting reforestation potential.

Alternative E will result in 1,329 acres of reduced productivity soil conditions after harvest activities. These conditions will still maintain consistency with Forest and Regional standards and guidelines with no unit exceeding 20 percent disturbance standards. I have incorporated Best Management Practices, Project Design Features, and Mitigation Measures to ensure compaction is minimized and the amount of disturbed soil for landing and skid trails will be limited to the minimum necessary to achieve management objectives.

Most slash generated from the proposed management activities including commercial and non-commercial activities (thinning, mastication or mowing) will be machine piled and utilized or piled and burned on designated log landings and/or main skid trails. Low-intensity prescribed fire will also be utilized to reduce fuel loading, treat the shrub layer, and reintroduce fire for resource benefits. Project Design Features will help ensure sufficient down wood & coarse woody debris is retained and that burning is conducted when soil moistures minimize the risk of intense ground-level heating. On Walker Rim, or where units have slopes exceeding 30 percent, handfelling will occur and slash will be handpiled and burned; however, burning the small concentrations of slash material is not expected to result in severely burned soil.

Recreation (FEIS, pg. 413)
Most of the recreation use in the Rim-Paunina area comes from dispersed camping, with 23 inventoried traditional dispersed camping sites. There is one developed site at Boundary Springs that receives seasonal use; OHV enthusiasts in the spring and big game hunters in the fall. I have incorporated Project Design Features to minimize effects to users as many of these traditional dispersed camping sites will be overlapped by commercial thinning and/or prescribed burning. The Three Trails Off-Highway Vehicle (OHV) system is currently being built and overlaps the Rim-Paunina project area. Public notification is important to me so that users will know when activities are scheduled and can adjust their plans accordingly. Portions of the trail or dispersed camping sites may have to be closed for visitor safety due to harvest operations or due to reduced visibility and hazards associated with potential exposure to fire and equipment during prescribed burning operations.

Several of the main roads in the project area are groomed as snowmobile trails in the winter. Thus, I have included Project Design Features to maintain safety of users as well as mitigation measures that seasonally restrict harvest operations and haul routes to protect access and quality of winter snowmobile trails.

Botany and Invasive Plants (FEIS, pg. 418)
There are no known occurrences of federally-listed Threatened or Endangered plants in the project area. Of those sensitive plant species that occur (pumice grape-fern under the Bonneville Powerline and tomentypnum moss in wetlands/fens adjacent to where thinning will occur), I have incorporated measures to direct activities and impacts away from the known populations. To ensure protection, flagging for avoidance will be completed prior to any equipment use and no equipment or vehicles will be staged within the flagged areas.

Although matsutake mushroom habitat is widespread across the District, the Rim-Paunina area has only marginal habitat for matsutake mushroom and there will be no quantifiable effects to matsutake production as the result of implementing Alternative E.

Alternative E was found to pose a risk for the introduction and spread of weeds. Currently, there is a minimal number of invasive plant occurrences in the planning area, with most of the historical occurrences being found along highways 97 and 58. Heavy equipment has the potential to transport weeds not only on the wheels and tracks, but from the transport platform as well. I have brought forward all the proposed Project Design Features for Invasive Plants to reduce the potential to spread weeds (FEIS, pg. 79).

Fisheries and Aquatic Resources (FEIS, pg. 435)
There are no perennial waterbodies or fish bearing streams in the project area and the water quality analysis for the project area is limited to intermittent and ephemeral draws (Boundary Springs and Five Mile Draw), therefore, the Magnusson-Stevens Fishery Conservation Act (MSA) does not apply. I have reviewed the State of Oregon 303(D) list for impaired water bodies and there are none in the project area.

I realize that thinning will occur in approximately 132 acres of Riparian Habitat Conservation Areas (RHCA) to address lodgepole encroachment and promote meadow restoration. Project Design Features are in place to restrict mechanized equipment to the edge of the mapped sensitive soils.

Transportation System (FEIS, pg. 452)
Harvest operations are expected to require approximately 8.3 miles of temporary road to be developed. Temporary roads are built to facilitate ground-based harvest systems for the purpose of removing forest products from a treated stand. Temporary roads will be built to low specifications and will allow equipment access to landing sites. I realize that effects from the temporary roads include compaction, increased erosion, and loss of infiltrative capacity. Therefore, these temporary roads will be restored after use by such means as decompaction and barricaded to eliminate motor vehicle traffic.

Commercial haul activities and other vegetative treatments in the project area will result in the use of approximately 170 miles of existing Forest Service system roads. No new system roads will be built. In addition, approximately 58 miles of currently closed and in custodial status as Maintenance Level I roads will be temporarily opened. These roads will be returned to their current closed condition after project-related use is complete. Maintenance work on project roads will include blading, brushing, and rocking as necessary.

Cultural Resources (FEIS, pg. 461)
Following guidelines in a 2003 Regional Programmatic Agreement (PA) between the USDA Forest Service, the Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Office (SHPO), consultation resulted in a finding of "*Historic Properties Avoided*" under Stipulation III(B)2 of the PA. The Forest finds that there are historic properties but the undertaking will have no effect on them as defined by 36 CFR 800.16(i).

In addition to avoidance, this finding is based upon a mitigation measure to "pre-treat" the buffer around identified stacked rock feature sites by removing fuels prior to implementation of prescribed fire. The intent is to lessen the risk of prescribed fire in the vicinity of this site type. These areas will be identified in the implementation plan following the decision and will be coordinated between the district archaeologist, timber sale administration, and all post sale work accomplished by contractors.

This measure has been used with success on the forest on similar sites and has been highly effective and reliable.

Therefore, these actions are consistent with the Preservation of American Antiquities Act of June 1906 and The National Historic Preservation Act of 1966 as amended.

Scenery (FEIS, pg. 466)
To incorporate heterogeneity and greater diversity in the scenic corridors along Highway 97 and 58, I have determined that some understory thinning near the highways is necessary. The resulting opening of the foreground will showcase larger yellow-barked ponderosa pine to forest visitors. In some areas close to the Highways prescribed underburning is also necessary to meet fuels objectives to reduce wildfire risk. The proposed activities have been designed to be subordinate to the larger landscape in order to be consistent with the standards and guidelines for scenic views within the Deschutes Forest LRMP.

I have incorporated Project Design Features such as design and layout of skid trails and landings to minimize visibility. Landings closer than 200 feet to scenic travel corridors and access roads will be reviewed and approved on a case by case basis. To minimize soil contrast, all visible slash will be handpiled and disposed within two years, or a slashbuster will be utilized, which will also minimize potential smoke on the highway from prescribed burning operations. No marking paint, tags, ribbons, or boundary signs will be visible from the highway following project completion. These measures have been used on the nearby Davis Fire Recovery Project as well as numerous other projects on the forest. They have proven to be highly effective and practical to implement.

Safety and Public Health (FEIS, pg. 470)
Safety of forest visitors, employees, and contractors is a main consideration when project implementation activities start. Notification will be made when activities are proposed/scheduled that could pose hazardous conditions to the public, such as danger tree removal along routes, tree-felling, project-related traffic increases, prescribed underburning, and where overlapping administrative actions such as active timber sales and prescribed burning will affect riders in the new Three Trails OHV trail area. Riders will be well informed of vegetation management activities through personal contact, signing, and the central Oregon website. If a portion the trail system has to be closed to provide for safety, it will be well coordinated among the riders and the appropriate personnel.

I also considered that people who suffer from breathing ailments may experience some difficulty during periods of prescribed burning, especially during atmospheric conditions that do not favor dispersion of smoke. The greatest risk of exposure to airborne toxins from prescribed fires or wildfires would be to firefighters and forest workers implementing the prescribed burning. Although OHV riders and dispersed campers may encounter prescribed burning operations while on an overlapping designated trail, it is unlikely any members of the general public will be exposed to toxin levels adverse to human health. This is because the implementation of prescribed burning operations in the Rim-Paunina analysis area will be relatively far from populated areas and burn prescriptions are designed to lessen the release of particulate matter. The Two Rivers North private subdivision is located on the western boundary of the project area, approximately one-half mile to the west of the closest prescribed burning unit. Residents will be notified in advance of any prescribed underburning in the area. In addition, local winds are predominately from the southwest thus most of the smoke is anticipated to be pushed away from the subdivision.

The Forest Service voluntarily follows the State of Oregon Smoke Management Plan and burn days and emissions are assigned on a cumulative basis. I have included Project Design Features that were developed in order to reduce risk to visitors as a result of fuel hazard abatement activities. The

preferred methods for slash treatment directly adjacent to the highways will include hauling piles away, or mastication (e.g. "slash busting").

Social and Economics (FEIS, pg. 475)
Purpose and Need #2 of the project describes the need to provide wood products to meet public needs and contribute to the health of local and regional economies. Timber harvest (lumber and wood products) and road work (temporary road construction and reconstruction) associated with the Rim-Paunina project will affect employment and income in three ways: (1) direct effects attributable to employment associated with the harvesting, transportation, and manufacturing; (2) indirect effects attributable to industries that supply materials, equipment, and services to these activities; and (3) induced effects attributable to personal spending by the owners, employees, families, and related industries. The communities of Gilchrist, Crescent, and Crescent Lake have historically relied upon logging as the primary economic driver. Alternative E will provide timber volume at approximately 24.1 Million Board Feet. This has the potential to create and/or retain 410 jobs in the timber industry as well as support jobs in goods and services (food, lodging, fuel) in the local communities.

Potential Wilderness Area Inventory (FEIS, pg. 482)
A Potential Wilderness Area (PWA) inventory following the criteria found in FSH 1909.12 Chapter 71.1 was conducted on the 40,000 acre Rim-Paunina project area and a two mile buffer of lands surrounding the project area to assess whether project related actions will have effects on the ability of undeveloped areas to be considered in a future potential wilderness inventory.

Through implementation, Alternative E will remove 790 acres from future consideration in a potential wilderness inventory, resulting in a reduction from 6,018 to 5,228 potential acres for the project area. Of this amount, 99 acres are from harvest activities which will produce stumps which will be evident for 10-30 years and thus remove this acreage from a potential wilderness inventory for that time. These acres are contained within finger extensions surrounded on three sides by roads. There will still be a solid unfragmented core that would meet PWA criteria for inclusion in a future inventory.

The remaining 691 acres have fuels only prescriptions that include small diameter hand thinning to an eight inch diameter, and pruning to a height of eight feet or one third of the crown height on over 80 percent of the activity area to help reduce the underbrush and ladder fuels followed by prescribed burning. The small diameter thinning will change the composition and structure of the vegetation and leave evidence of the fuels activity work (stumps, handpiles, hazard tree removal, potential to cut additional trees when building fireline) on the landscape for 5-10 years.

Climate Change (FEIS, pg. 513)
Agency direction states: "[b]ecause greenhouse gases mix readily into the global pool of greenhouse gases, it is not currently possible to ascertain the indirect effects of emissions from single or multiple sources (projects). Also, because the large majority of Forest Service projects are extremely small in the global atmospheric carbon dioxide context, it is not presently possible to conduct quantitative analysis of actual climate change effects based on individual projects (USDA 2009)." Thus, a quantitative analysis and comparison between the alternatives of trade-offs between the amounts of carbon stored or greenhouse gases emitted is not possible at the current project scale. The scale of this action will likely be immeasurable when considered at a global scale.

However, I recognize that climate change and carbon sequestration are important issues both nationally and regionally and have considered the potential benefits this project may have on long-term carbon sequestration. Published research suggests that management actions can have a positive effect on carbon storage. Hurteau et al. (2008) points out that in forests where fire exclusion has

caused fuel accumulation (such as on Walker Rim) tree density and forest fuel reduction activities can diminish the risk of stand-replacing fire, thereby promoting carbon storage.

Public Involvement

Interested citizens were provided multiple opportunities to weigh in on this project and participate in project development. The public scoping letter was mailed on January 27, 2009. The Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) for the Rim-Paunina Project was published in the *Federal Register* on May 22, 2009. A field trip was held on June 3, 2009 for the public and conservation groups who were interested in an on-the-ground look and to discuss the various treatments proposed for the project area. In addition to the Notice of Intent (NOI), the Crescent District Ranger requested feedback on the alternatives in a December 1, 2009 letter updating interested stakeholders (individuals, agencies, and organizations) on the progress of the project.

The development of the Rim-Paunina project was bolstered by robust collaborative participation from a diverse group of external stakeholders. This group was convened and facilitated through the Central Oregon Intergovernmental Council (COIC) acting as a third party. Collaborators included forest conservation and wildlife advocates, forest products harvesting interests, recreation interests, and timber industry advocates. All meetings were open to the public and followed Federal Advisory Committee Act guidelines, which enabled participation by the full diversity of groups interested in the well-being of the Deschutes National Forest and the resources it manages. The ongoing dialogue within the collaborative group over the course of 11 months as well as between the group and the Forest Service helped generate key issues and develop potential solutions to tackle these issues that supported the Forest Service planning process. The diversity of perspectives and the inclusivity of the collaborative group enabled all sides of an issue to be explored. In sum, this project was strengthened by enthusiastic participation from a broad group of stakeholders, helping the agency best meet the dual purpose and need of the project; creating a diversity of wildlife habitats while also providing timber and other wood products to the local community.

A 45-day comment period for the Project Draft Environmental Impact Statement (DEIS) was provided for interested and affected members of the public, including appropriate local, state, federal government agencies, and American Indian Tribes. This period started with Notice of Availability in the Federal Register on April 6, 2012 and published in *The Bulletin*, the newspaper of record on April 11, 2012. The public comment period ended on May 21, 2012.

Consideration of Public Comment

My conclusions in this ROD are based on a reivew of the record that shows a thorough review of the relevant scientific information, a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information and scientific uncertainty.

During the comment period, the Forest Service received comments from different sectors of the public, with a range of concerns and questions. Some comments resulted in a clarification of discussions within the DEIS. I have reviewed and considered the comments in the decision-making process. All comments were reviewed and substantive comments received the focus during this comment analysis. The complete comment records are kept within the Rim-Paunina Project record and are available for review at the Crescent Ranger District, Crescent, OR. Appendix E of the FEIS documents how I considered and responded to the comments provided by the public, and Appendix F documents my consideration of science provided by the public during the comment period.

Consultation with Tribes and Government Agencies

Tribal consultation was initiated with the proposed action being presented in a letter dated April 17, 2009 (prior to general public release) to the Tribal Chairs and their Cultural Resource Program Managers of The Klamath Tribes, Confederated Tribes of Warm Springs and the Burns-Paiute Tribe. The Klamath Tribes responded with an interest in potential disturbance to culturally important sites on Walker Rim and Little Walker Mountain. To respond to this concern Project Design Features were incorporated to buffer any known sites prior to treatment activities and if during treatment activities any cultural artifacts or features are discovered, work will be halted until an archeologist can review the site.

Oregon State Historic Preservation Office (SHPO) consultation resulted in a finding of "*Historic Properties Avoided*" under Stipulation III(B)2 of the Programmatic Agreement.. Informal coordination has occurred with other federal, state, and local government officials (Chapter 4, FEIS). No consultation with the US Fish and Wildlife Service (USFWS) was needed on this project. This project is outside the boundaries of the 1994 Northwest Forest Plan, therefore no direction in the Northwest Forest Plan (NWFP) applies to this project.

Other Alternatives Considered in Detail

The FEIS documents the analysis of five alternatives. In addition to Alternative E, three other action alternatives and a "No Action" alternative were analyzed. The four action alternatives considered in the FEIS were developed to address the key issues and examine different combinations of activities. All five alternatives, including the No Action alternative, were fully developed, while six alternatives were considered but eliminated from full development due to their inability to meet the purpose and need of the Rim-Paunina project (FEIS, pg. 86-87). For additional details on these alternatives, see the FEIS (Chapter 2, Alternatives B, C, D, and E).

Alternative A – No Action

The No Action Alternative is included as a baseline comparison of continuing the existing conditions without implementing the proposed actions as required by the CEQ Regulations (40 CFR 1502.14). Alternative A/the No Action would not implement any changes in the current management direction. No thinning or fuels treatments would be implemented to accomplish project goals. There would be no Forest Plan amendments to the Deschutes Land and Resource Management Plan as amended by the Eastside Screens. Custodial activities would continue, such as routine maintenance of roads and timber plantations. Response to environmental emergencies, such as suppression response to wildfire, would continue.

This alternative was not selected because it does not meet either Purpose and Need #1 for density reduction in order to provide a variety of stand structures/compositions to increase resilience and habitat diversity for a variety of species on the landscape, or Purpose and Need #2 to contribute to local and regional economies through provision of timber and other products. Severe mistletoe infection would continue in large portions of the project area, impeding the development of large trees and the associated MIS habitat. Those MIS species that depend on a more open habitat condition would continue to lose habitat on the landscape. Additionally, no wildfire risk reduction activities would take place, maintaining or increasing the current risk level to natural resources, adjacent private residences, and the traveling and recreating public.

Alternative B

Proposed Action

Alternative B, as the initial proposed action for this project, would use silvicultural treatments/ground-based logging methods to provide a diversity of habitats for Management Indicator Species more in

line with historical conditions to maintain and enhance existing late- and old-structured stand characteristics, and encourage the development of such characteristics. Density reduction thinning (HTH) would occur on 6,082 acres while improvement cutting (HIM) would occur on 5,910 acres. It also would apply prescribed fire to fire-dependent ecosystems (approximately 8,506 acres) to create habitat conditions that allow fire to perform its natural ecological function and more closely mimic natural processes that maintain white-headed woodpecker habitat and other dependent wildlife species. There would be approximately 19.9 Million Board Feet (MMBF; 39,800 CCF), of which approximately 70 percent would be saw logs. Approximately 9.2 miles of temporary roads would be constructed.

Alternative B was not selected as I felt it does not go far enough in addressing the need to reduce stand density and provide a variety of stand structures, nor does it address the severe dwarf mistletoe infection (Key Issue #2) and the need to reduce re-infection of the understory to help address the gap-in-time that large trees are absent on the landscape. Additionally, the proposed action did not retain enough dense ponderosa pine stands or decadent lodgepole pine stands, as identified in Key Issues #1 and #3. Finally, the use of prescribed fire on the landscape to achieve resource benefits and reduce wildfire risk was not utilized as fully as I believe it should be (Key Issue #4). Therefore Alternative B was not selected because it is less effective in meeting the Purpose and Need for the action described in the FEIS when compared to Alternative E.

Alternative C

This alternative was developed to provide more of a balance between species that prefer open ponderosa pine stands and those that favor denser, multi-layered conditions (Key Issue #1), dropping treatment in approximately 365 acres of dense stands in comparison to the Proposed Action. Also, it drops treatment in some decadent lodgepole pine stands (1,878 acres in comparison to the Proposed Action) to provide more of a balance between short and long-terms by providing habitat for Management Indicator Species such as the black-backed woodpecker and the marten (Key Issue #3). Density reduction thinning (HTH) would occur on 5,717 acres while improvement cutting (HIM) would occur on 4,032 acres. Return of a frequent fire regime in appropriate stands is also a component of this alternative (Key Issue #4), as it includes 12,762 acres of prescribed burning treatments. Included in this are 1,205 acres of noncommercial small diameter thinning within the Old Growth Management Area on Walker Rim, followed by handpiling, disposal, and application of a low-intensity fire to ready the stand for a frequent fire regime in a maintenance mode, as well as 3,780 acres of slashbusting/brush mastication and prescribed fire in stands that are ready for a frequent fire regime without reduction of stand density.

In addition to deferring management in some lodgepole pine stands, this alternative incorporates some additional passively-managed patches or "retention areas" greater than 15 percent in some ponderosa pine and lodgepole pine activity units. The objective is to provide more contiguous suitable habitat for a potential goshawk nest stand; nesting, roosting, foraging for black-backed woodpeckers; denning and foraging for American marten; and hiding cover, foraging for big game. This alternative would generate approximately 15.3 Million Board Feet (MMBF; 30,600 CCF), of which approximately 70 percent would be saw logs. Approximately 6.5 miles of temporary roads would be constructed.

Alternative C was not selected as I felt that the mistletoe treatments were not likely to be effective enough to achieve retention of large trees on the landscape. Using only standard thinning prescriptions to attempt to reduce the impact of severe mistletoe infection on the development of large trees was projected in the analysis to be less effective than the alternate mistletoe prescription outlined in Alternative E (FEIS, pg. 362). Alternative C was also shown to be less effective than Alternative E at reducing the risk of wildfire within and adjacent to the project area, as evidenced by the fire path analyses in the FEIS. This alternative would treat approximately 700 fewer acres than Alternative E

with prescribed fire. Finally, Alternative C was the least effective of the action alternatives at meeting Purpose and Need #2 of the project and providing economic stimulus to the local economy. It was projected to generate only 260 jobs, as compared to 410 from Alternative E, a difference which is substantial in the small rural communities surrounding the project area.

Alternative D

This alternative uses Alternative C units as the base, but addresses dwarf mistletoe infection (Key Issue #2) with a higher level of projected effectiveness by emphasizing a focused strategy to reduce the length in time for when large trees are absent from those areas currently most heavily infected. It uses density control and application of prescribed fire in "light" and "moderate" infected stands; however, it uses a Harvest Group Selection (HSG) prescription in approximately 2,593 acres of stands categorized as "severely infected", as determined by on-the-ground inventory. This alternative proposes to break the cycle of continual infection by creating openings of 2-5 acres across portions of stands where ponderosa pine seedlings currently have little chance to advance beyond a seedling/sapling stage. These openings would be created on approximately 30 percent of the area in severely infected stands (778 acres). In those openings all trees, including those over 21 inches in diameter, would be cut and removed followed by planting of conifers. In addition to addressing the future health of the stands, these openings would serve to create a mosaic of different tree sizes and densities within each stand, which was a historical component of the landscape. The remaining 70 percent of these severely-infected acres will receive density reduction prescriptions to retain the healthiest trees, as well as all trees 21 inches and over. A Forest Plan amendment to the Eastside Screens would be required for this alternative to remove severely infected trees 21 inches and over, and to amend direction for Late and Old Structured (LOS) stands.

Outside of the HSG prescription, density reduction thinning (HTH) would occur on 4,307 acres while improvement cutting (HIM) would occur on 2,849 acres. Prescribed fire and other treatments aimed at returning a frequent low-intensity fire regime are the same as those described in Alternative C. This alternative is estimated to produce approximately 25.3 Million Board Feet (MMBF; 50,600 CCF), of which approximately 70 percent would be saw logs. Approximately 6.5 miles of temporary roads would be constructed.

Alternative D was not selected as I felt that the mistletoe prescription was not likely to be effective enough to achieve retention of large trees while impacting the landscape by removing trees of all size classes. The analysis in the FEIS showed that the Alt. Mist prescription used in Alternative E was projected to be more effective at alleviating the effects of severe mistletoe infection on the landscape (FEIS, pg. 362). In addition, Alternative E will induce mortality and retain the trees over 21 inches in diameter on-site as snags, as analysis showed the project area is deficient in high density snags in the Ponderosa pine/Douglas-fir habitat type for the diameter classes "greater than or equal to 10 inches" and "greater than or equal to 20 inches" (FEIS, pg. 109). There is a need to balance mistletoe treatment with the retention of large snags on the landscape for use by MIS species. Alternative D was also shown to be less effective than Alternative E at reducing the risk of wildfire within and adjacent to the project area, as evidenced by the fire path analyses in the FEIS. This alternative would treat approximately 700 fewer acres with prescribed fire than Alternative E.

Changes between Draft and Final EIS

The following changes were made between the Rim-Paunina Project Draft and Final EIS. This list does not include minor grammatical corrections, editorial formatting, and clarification of data previously presented. The changes were driven by public comment and a comprehensive internal review.

- A snag and down wood analysis was completed for the project
- Additional analysis for Goshawk was completed using Modeled Home Ranges
- A map of existing potential pileated woodpecker nesting habitat was added
- Effects analysis for Gray Wolf was added
- The implementation of the 2012 Crescent Roadside Firewood Strategy was added to the cumulative effects for those species who need down wood for habitat and other potential affected resource areas
- The Potential Wilderness Analysis was updated to include additional disclosure of impacts on 691 acres of fuels only acres

Legal Requirements and Policy

In reviewing the FEIS and actions involved in Alternative E, I have concluded that my decision is consistent with the following laws and requirements that have not previously been discussed in this document.

The National Environmental Policy Act (NEPA)

NEPA establishes the format and content requirements of environmental analysis and documentation. The entire process of preparing this environmental impact statement was undertaken to comply with NEPA.

The National Forest Management Act (NFMA)

I have reviewed the analysis and find this decision to be consistent with the Deschutes National Forest Land and Resource Management Plan (LRMP), as amended, and with the requirements of the National Forest Management Act implementing regulations. This decision includes two amendments to the LRMP determined to be insignificant, as discussed previously in this document.

I find the selected alternative to be consistent with the requirements of the National Forest Management Act implementing regulations, specifically that there is no timber harvest on lands classified as unsuitable for timber production. Alternative E is consistent with 36 CFR 219.28.

The 1994 Northwest Forest Plan

This project is outside the boundaries of the Northwest Forest Plan, therefore no direction in the Northwest Forest Plan (NWFP) applies to this project.

The Clean Water Act, 1982 and 303(d)

The selected alternative will comply with the Clean Water Act. It meets anti-degradation standards through planning, application, and monitoring of Best Management Practices (BMPs). The Environmental Protection Agency has certified the Oregon Forest Practices Act and regulations as BMPs. The State of Oregon has compared Forest Service practices with the State practices and concluded that Forest Service practices meet or exceed State requirements. Site-specific BMPs have been designed to protect beneficial uses. Chapter 2 of the FEIS lists the design criteria and resource protection measures that are common to all action alternatives. A number of these measures are BMPs. Appendix B of the FEIS describes the application of water quality BMPs and lists the applicable measures that will be utilized to implement the activities.

National Pollution Discharge Elimination System (NPDES) Permits: With the Consolidated Appropriations Act (2012, § 429, Pub. L. No. 112-74, 125 Stat. 786 1046-1047), Congress has temporarily suspended the permitting requirement imposed by the Ninth Circuit Court of Appeals' decision in Northwest Environmental Defense Center (NEDC) v. Brown. In NEDC v. Brown, the court held that stormwater runoff associated with logging roads is not exempt from the National

Pollution Discharge Elimination System (NPDES) permitting requirements of the Clean Water Act. While the impacts of this ruling to Forest Service projects are still uncertain, since there are no perennial or fish bearing waterbodies in the Rim-Paunina planning area, it is unlikely that this ruling would impact this project.

The FEIS documents that there are no perennial or fish-bearing streams or waterbodies within the Rim-Paunina Project area. There is no threatened, proposed, candidate, or sensitive aquatic species or their habitat within the Rim-Paunina planning area. There are no 303(d) listed water bodies in the Rim-Paunina planning area.

Clean Air Act
The FEIS provides a thorough discussion of how Alternative E could affect the location of an unplanned human-caused wildfire ignition (Chapter 3, Fire and Fuels), which could have a relationship to air quality. The potential for any of the alternatives to affect air quality indirectly related to wildfires is predicted to be minimal.

In Alternative E, there may be some localized temporary air quality impairments from prescribed burning, but the Forest Service follows the State of Oregon Smoke Management Plan. This plan regulates cumulative smoke outputs daily in airsheds regardless of ownership and uses existing and predicted weather forecasts. Any burning adjacent to or with the potential to affect the smoke produced by prescribed burning in the Rim-Paunina area will be regulated in this manner. Burn days and emissions are assigned on a cumulative basis.

The Rim-Paunina Project area is over 50 miles from the nearest area designated as potentially air quality impaired (Bend, Oregon).

Civil Rights and Environmental Justice
Executive Order 12898 on environmental justice requires federal agencies to identify and address any disproportionately high and adverse human health or environmental effects on minority and low income populations. The analysis focused on potential effects from the project to minority populations, disabled persons, and low-income groups.

Disparate impact, a theory of discrimination, has been applied to the Rim-Paunina planning process in order to reveal any such negative effects that may unfairly and inequitably impact beneficiaries regarding program development, administration, and delivery. The objectives were to prevent disparate treatment and minimize discrimination against minorities, women and persons with disabilities and to ensure compliance with all civil rights statutes, Federal regulations, and USDA policies and procedures. Alternative E, given the size of potential social and economic effects, is not likely to result in civil rights impacts to Forest Service employees or customers of its program.

Development of the Rim-Paunina Project has been conducted under Departmental Regulation 5600-2, December 15, 1997, and the Council on Environmental Quality's Environmental Justice – Guidance under the National Environmental Policy Act. It was determined that the Rim-Paunina Project has the potential to bring in workers from outside the immediate geographic area, employ local citizens, and create business in the form of services needed such as food and lodging. The proposed action, its purpose and need and potential effects have been clearly described, and as mentioned above, scoping under the National Environmental Policy Act employed a variety of approaches to involve citizens, including those identified by the Executive Order, in the planning process.

Based on the social and economic analysis presented in Chapter 3 of the FEIS, there were no potentially disproportionately high and adverse human-health, environmental, or social effects to minority or low-income populations identified.

The Endangered Species Act of 1973, as amended
Biological Evaluations have been prepared to document possible effects of proposed activities on Threatened, Endangered, and Federal Candidate species in the Rim-Paunina Project area, and have been included in the FEIS in their entirety. This evaluation for aquatic species, sensitive plants, and terrestrial wildlife determined that while there may be some impacts to individual sensitive species, those effects are not likely to contribute to a trend toward federal listing or loss of viability of the population or species.

The summary of conclusions for Threatened and Endangered Species and Federal Candidate Species is that Alternative E would have "**No Effect**" on Bull Trout fisheries or their aquatic habitat, and **"No Impact"** on Redband Trout fisheries or their aquatic habitat.

Alternative E would have **"No Effect"** on the northern spotted owl and northern spotted owl critical habitat, as the planning area is outside the range of the northern spotted owl and the 2008 Critical Habitat boundaries, and the Gray Wolf.

Alternative E would have **"No Impact"** on the Oregon spotted frog and North American wolverine. Alternative E would result in a determination of **"May Impact Individuals or Habitat, But Would Not Likely Contribute to a Trend Toward Federal Listing or Loss of Viability to the Population or Species"** for the Pacific fisher.

In addition, Management Indicator Species (MIS) are discussed in Chapter 3 of the FEIS and all activities have been found to be consistent with the Deschutes National Forest Land and Resource Management Plan, as amended, for this category of species.

Other Policy or Guiding Documentation

The Environmentally Preferable Alternative

Under the National Environmental Policy Act, the agency is required to identify the environmentally preferable alternative (40 CFR 1505.2(b)). This is interpreted to mean the alternative that will cause the least damage to the biological and physical components of the environment, and that bests protects, preserves, and enhances, historic, cultural, and natural resources (Council on Environmental Quality, *Forty Most Asked Question Concerning CEQ's National Environmental Policy Act Regulations*, 46 Federal Register 18026). Factors considered in identifying this alternative include: (1) fulfilling the responsibility of this generation as trustee of the environment for future generations, (2) providing for a productive and aesthetically pleasing environment, (3) attaining the widest range of beneficial uses of the environment without degradation, (4) preserving important natural components of the environment, including biodiversity, (5) balancing population needs and resource use, and (6) enhancing the quality of renewable resources. An agency may discuss preferences among alternatives based on relevant factors, including economic and technical considerations and statutory missions {40 CFR 1505.2(b)}.

I have determined that the environmentally preferable alternative is Alternative E for the short- and long-term. Alternative E is the most effective alternative at returning the landscape to a more environmentally historical diversity of habitats, in support of an equally diverse assortment of wildlife species. Alternative E both creates open ponderosa pine habitat for white-headed woodpecker and

other species, and retains dense ponderosa and decadent lodgepole pine habitat for species that prefer those conditions. In short, purpose and need #1 of this project expresses a need to preserve a suite of natural resources (stand conditions, wildlife, etc.) that are in decline on the landscape, and thus the alternative that best meets this purpose and need was also found to be the environmentally preferable alternative.

Alternative E also incorporates a wide range of project design criteria and mitigation measures (listed in Appendix A of this ROD as well as in Chapter 2 of the FEIS) which aim to minimize impacts on other natural and cultural resources while conducting management actions to meet the purpose and need of the project.

Monitoring

I have decided to include monitoring protocols (FEIS, pg. 85) as part of my decision, designed to accomplish three purposes: 1) to assure that all aspects of the project are implemented as intended; 2) to determine, for certain critical activities, that the effects of the activities are consistent with the intent; and 3) to allow adaptation if it is found that activities are not being implemented correctly or are not having the desired effects. This monitoring will help ensure that the implementation of harvesting and prescribed burning operations will achieve the desired objectives and not lead to unanticipated effects on resources.

Implementation

Implementation will likely begin in spring/summer of 2013. I have reviewed the Rim-Paunina Project FEIS and associated appendices. I believe there is adequate information within these documents to provide an informed choice of action. I am fully aware of the possible adverse environmental effects that cannot be avoided (FEIS, pg. 520), and the irreversible/irretrievable commitment of resources associated with the Selected Alternative (FEIS, pg. 521). I have determined that these risks will be outweighed by the likely benefits.

Implementing the Selected Alternative will cause no unacceptable cumulative impact to any resource. The FEIS adequately documents how compliance with these requirements is achieved (FEIS, Chapter 3).

Minor changes may be needed during implementation to better meet on-site resource management and protection objectives. In determining whether and what kind of further NEPA action is required, I will consider the criteria for whether to supplement the existing Environmental Impact Statement in 40 CFR 1502.9(c) and FSH 1909.15, sec. 18, and in particular, whether the proposed change is a substantial change to the intent of the Selected Alternative as planned and already approved, and whether the change is relevant to environmental concerns. Connected or interrelated proposed changes regarding particular areas or specific activities will be considered together in making this determination. The cumulative impacts of these changes will also be considered.

Appeal Rights

This decision is subject to appeal pursuant to 36 CFR 215. The 45-day appeal period begins the day following the date the legal notice of this decision is published in *The Bulletin*, Bend, Oregon, the official newspaper of record. The Notice of Appeal must be filed with the Reviewing Officer at:

Appeal Deciding Officer,
Pacific Northwest Region, USDA Forest Service
Attn. 1570 Appeals
333 S.W. First Avenue
PO Box 3623
Portland, OR 97208-3623

Appeals can also be filed electronically at: appeals-pacificnorthwest-regional-office@fs.fed.us, FAX to 503-808-2339, or hand-delivered to the above address between 7:45 AM and 4:30 PM, Monday through Friday except legal holidays. The appeal must be postmarked or delivered within 45 days of the date the legal notice for this decision appears in *The Bulletin* newspaper. The publication date of the legal notice in the newspaper is the exclusive means for calculating the time to file an appeal and those wishing to appeal should not rely on dates or timeframes provided by any other source.

Electronic appeals must be submitted as part of the actual e-mail message or as an attachment in Microsoft Word (.doc), rich text format (.rtf), or portable document format (.pdf) only. E-mails submitted to e-mail addresses other than the one listed above, in other formats than those listed, or containing viruses will be rejected.

It is the responsibility of those who expressed an interest during the comment period and wish to appeal a decision to provide the Regional Forester sufficient written evidence and rationale to show why my decision should be changed or reversed. The appeal must be filed with the Appeal Deciding Officer (§ 215.8) in writing. At a minimum, an appeal must include the following:

1. Appellant's name and address (§ 215.2), with a telephone number, if available;
2. Signature or other verification of authorship upon request (a scanned signature for electronic mail may be filed with the appeal);
3. When multiple names are listed on an appeal, identification of the lead appellant (§ 215.2) and verification of the identity of the lead appellant upon request;
4. The name of the project or activity for which the decision was made, the name and title of the Responsible Official, and the date of the decision;
5. The regulation under which the appeal is being filed, when there is an option to appeal under either this part or part 251, subpart C (§ 215.11(d));
6. Any specific change(s) in the decision that the appellant seeks and rationale for those changes;
7. Any portion(s) of the decision with which the appellant disagrees, and explanation for the disagreement;
8. Why the appellant believes the Responsible Official's decision failed to consider the comments and;
9. How the appellant believes the decision specifically violates law, regulation, or policy.

Contact Persons

For additional information concerning the specific activities authorized with my decision, you may contact:

Tim Foley
Environmental Coordinator
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P.O. Box 208
Crescent, OR 97733
(541) 433-3200

Holly Jewkes
District Ranger
Crescent Ranger District
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Responsible Official

John Allen
Forest Supervisor
Deschutes National Forest

1-23-2013
Date

Resource Protection Measures

Project Design Features Common to All Action Alternatives

The following features are incorporated into the design of all activities included in the Rim-Paunina project. The difference between these design features and mitigation measures is that these are considered routine, have been used on numerous similar projects, and are either incorporated into contract provisions or accomplished between appropriate resource specialists, and have proven to be effective. Mitigation Measures are site-specific, usually have a specific unit(s) assigned to them, and are used to avoid, minimize, rectify, reduce, or compensate an impact (40 CFR 1508.20). For example, a Project Design Feature may include a seasonal closure for an unknown nest site (if discovered); a mitigation measure would place a seasonal closure on a known nest site specific to a unit. Project Design Features and Mitigation Measures are used as a basis for determining and disclosing effects in the Environmental Consequences discussions.

Vegetation Management

- Commercial material would be thinned and removed using harvest methods that ensure soil productivity and minimal damage to residual trees. Since the commercial market fluctuates widely, a precise division between small tree and commercial products is not defined within this document. Implementation of this project would utilize the smallest materials the commercial market would bear at the time of implementation. For removal of these special forest products, a conservative estimate for additional soil disturbance was factored in; however existing skid trails and disturbed areas would be utilized where feasible. Also, no additional access above what was needed for the harvest operation would be required.

- The diversity of species on the site would be retained, though the proportion of one species over another may change considerably. Generally, the preference for conifer species to retain is (from highest to lowest): Douglas-fir, sugar pine, western white pine, ponderosa pine, Shasta red fir, mountain hemlock, white fir/grand fir, and lodgepole pine. These preferences may vary on specific sites depending on the abundance of a given species, presence of pathogens, vegetative potential, and/or site-specific objectives.

- Structural diversity and spatial heterogeneity would be clearly maintained on the landscape, but may not be very diverse in a given activity unit. This means individual areas may be either single-storied, two-storied, or multi-storied more canopy layers.

- Trees of high value to wildlife would remain on site. Examples include, but are not limited to, true fir with conks that would indicate a future hollow log, non-lodgepole trees with multiple tops, trees with very large limbs, etc.

- Late and old seral and/or structural trees greater than or equal to 21 inches in diameter (Eastside Screens, Scenario A, 2(a)) would be retained, except in approximately 778 acres of openings to be created in Alternative D.

- For all prescriptions other than Harvest Group Selection (HSG) in Alternative D, those structurally advanced trees exhibiting fire and drought resistance would be retained within Old Growth Management Areas regardless of tree size or level of infection to provide for one of the goals of Management Area 15: "...naturally evolved old growth forest ecosystems (Forest Plan

4-149)." Generally, the bark plate widths of these trees are approximately 15 centimeters (6 inches) in width and more than three times wider than the darker fissures that separate them[1].

- Activities applied to the landscape, such as a return to a proper fire return interval in ecologically appropriate plant association groups would be maintained through time to optimize diversity and juxtaposition of habitats.

- In addition to retention of passively-managed patches across the landscape, silviculture prescriptions and prescribed burning plans would incorporate features that provide for spatial heterogeneity.

- All activities would take advantage of opportunities resulting from vegetation management activities that offset costs and provide products to stimulate the economy.

Soil and Water Quality

- If site specific investigation determines soils that are mapped for seasonally wet are inaccurate, then restrictions on mechanical methods may be lifted.

- The Riparian Management Objective is to maintain the unique values associated with wet meadow habitats in the Five Mile Draw area. Non-fish bearing streams and ephemeral streams would have one standard tree height or a 150-foot no-harvest buffer placed on either side of the stream except for those units specifically designed for riparian enhancement and restoration activities (units listed below). To accomplish this, some dead and downed material, as well as encroaching lodgepole pine would need to be removed ("Exceptions" TM-1a and b, INFISH A-7). Mechanized equipment would be restricted to the edge of the soils within the draw mapped as sensitive.

  Alternative B: 15, 20, 25, 35, 240, 285, 286, 355, 610
  Alternatives C, D, and E: 15, 20, 25, 240, 285, 286, 355, 610

- Meadow, wet draw restoration activities for the Five Mile Draw area includes removal of small encroaching lodgepole pine and removal of downed material where appropriate.

- There would be no use of tracked mechanized equipment associated with harvest operations on any wetted soils; permanent or seasonally. Storage of fuels and other toxicants for equipment as well as all refueling would occur outside of RHCAs, and would be regulated by contract provision (INFISH RA-4).

- Best Management Practices (BMPs) (USDA 1988) apply. Specific BMPs are for Timber Management (pp. 1-21), Road Systems (pp. 22-42), Fire Suppression and Fuels Management (pp.43-47), Watershed Management (pp. 48-55), and Vegetative Manipulation (pp. 71-73). These practices maintain the physical integrity of the aquatic system and in cooperation with the State of Oregon, are required to be followed in accordance with the Clean Water Act. For a complete list, see Appendix B, Management Direction.

- When designating access for harvest operations, utilize previously disturbed areas whenever possible. Assure that water control structures are installed and maintained on skid trails that

[1] Robert Van Pelt, 2008, *Identifying Mature and Old Forests in Western Washington* and *Identifying Old Trees and Forests in Eastern Washington*

have gradients of 10 percent or more. Ensure that erosion control structures are stabilized and working effectively (LRMP SL-1; Timber Management BMP T-16, T-18).

- In all proposed activity areas, locations for new yarding and transportation systems would be designated prior to the logging operations. This includes temporary roads, spur roads, log landings, and primary (main) skid trail networks. (LRMP SL-1 & SL-3; Timber Management BMP T-11, T-14 & T-16).

- Minimize potential erosive effects of concentrated water through the proper design and construction of temporary roads (Road BMP R-7).

- Conduct regular preventive maintenance to avoid deterioration of the road surface and minimize the effects of erosion (Road BMP R-18, R-19).

- Retain adequate supplies of large woody debris (greater than 3-inches in diameter) to provide organic matter reservoirs for nutrient cycling following completion of all project activities (LRMP SL-1). A minimum of 5 to 10 tons per acre of woody debris be retained on dry, ponderosa pine sites to help maintain long-term site productivity.

- The objective is to maintain existing sources of unburned or partially consumed, fine organic matter (organic materials less than 3-inches in diameter; commonly referred to as the duff layer) over a minimum of 50 percent of the prescribed burn unit (LRMP SL-6; Fuels Management BMP F-2; Timber Management BMP T-13).

- Maintain spacing of 100 to 150 feet between all primary (main) skid trail routes, except where they converge at landings. If closer spacing is necessary due to complex terrain, the Timber Sale Administrator must provide advance approval. Main skid trails spaced 100 feet apart would maintain soil quality on 89 percent of the unit area. For larger activity areas (greater than 40 acres) that can accommodate wider spacing distances, it is recommended that distance between main skid trials be increased to 150 feet to maintain soil quality on 93 percent of the unit area (Froehlich 1981; Garland 1983).

- Reclaim all temporary roads by applying appropriate rehabilitation treatments (such as the use of subsoiling equipment to loosen compacted soils) where detrimental soil conditions are expected to exceed the Regional Policy guidelines.

- Restrict skidders and tractors to designated areas (i.e. roads, landings, designated skid trails), and limit the amount of traffic from other specialized equipment off designated trails. Harvester shears would be authorized to operate off designated skid trails, at appropriate intervals, and make no more than two equipment passes[2] on any site specific area to accumulate materials.

- Prohibit sharp turning off of skid trails by mechanized equipment to minimize excessive soil displacement.

- Avoid equipment operations during periods of high soil moisture, as evidenced by equipment tracks that sink deeper than during dry or frozen conditions. An indication of potential

[2] A pass of a machine is defined as off the skid trail, cutting and accumulating material, and then traveling back to the skid trail to place the material

detrimental disturbance would be identifiable when ruts, or indentations in the ground after equipment travel appears six inches in depth or greater.

- Prevent additional soil effects in random locations of activity areas, between skid trails and away from landings, by machine piling and burning logging slash on existing log landings and skid trails that already have detrimental soil conditions. Machine piling and slashbusting equipment would be allowed one pass off of skid trails and landings because of minimal compaction effects associated with this equipment.

- On steep pitches (slopes of 30 percent or steeper) less than 100 feet long, equipment would be permitted to make one pass out and one pass back to harvest trees. In other areas, directional felling of trees to skid trails and /or line pulling should be utilized to harvest trees. This method applies to units that have a small amount of slopes over 30 percent in less than 10 percent of the unit area.

Wildlife

- Fifteen (15) percent of each unit, regardless of management allocation would be retained in an unmanaged condition averaged across the total of activity units within a subwatershed to provide strategic wildlife habitat and take advantage of lumping retention areas to increase their size and/or distribution. The areas would be positioned in a manner to accommodate prescribed fire within ecologically appropriate plant association groups. Using this strategy, some smaller activity units that are planned for return of a frequent fire regime may not be feasible to maintain retention areas over time; however, larger units could have more than 15 percent retention areas with larger patches. They would retain desired site characteristics such as dense multi-storied pockets, accumulations of snags and down logs, and the largest available healthy live trees, unique habitats (rock outcrops and mixed conifer/hardwood stands). They also would be used to retain other unique and desired resources such as cultural heritage sites, developed water sources (guzzlers), or wildlife connectivity corridors.

- Seasonal restrictions on all occupied wildlife habitat sites identified in this EIS would be placed as described in . Activities that may disturb each species would be determined by a qualified wildlife biologist, but generally include timber hauling, timber harvest, temporary road construction, small tree thinning, prescribed slash burning, and underburning operations. Seasonal restrictions may be waived in a given year if a wildlife biologist determines the species is in a non-nesting status, had a nest failure, or that the habitat is not occupied; waivers are only valid until the beginning of the next breeding season. There are no known Threatened or Endangered wildlife species within the project area. However, if new occupied habitats are discovered during sale layout or implementation of the Rim-Paunina Project, contract provisions are in place to halt operations for Threatened and Endangered species. For all other species, the Forest Service would negotiate with the purchaser or amend the timber sale contract in order to follow related Forest Plan Standards and Guidelines.

Table 1. Seasonal Restrictions on Disturbing Activities near Active Nest Sites, Wolverine Dens and Big Game Calving/Fawning Habitat

Species	Buffer Distance	Restricted Season
Northern spotted owl (nest)	¼ mile (most activities) or ½ mile	March 1 –August 31
Northern bald eagle (nest)	½ mile (line-of-sight) or ¼ (non line-of-sight)	January 1 – August 31
Bald eagle (winter roost)	To be determined by a wildlife biologist	November 1 – April 30
Golden eagle (nest)	¼ mile	February 1 – July 31
Goshawk (nest)	¼ mile	March 1- August 31
Osprey (nest)	¼ mile	April 1 – August 31
Red-tailed hawk (nest)	¼ mile	March 1 – August 31
Sharp-shinned hawk (nest)	¼ mile	April 15 – August 31
Cooper's hawk (nest)	¼ mile	April 1 – August 31
Great gray owl (nest)	¼ mile	March 1 – June 30
Great blue heron (nest)	¼ mile	March 1 – August 31
Wolverine (den)	2 miles	February 1 – May 30
Deer and Elk (fawning/calving habitat)	To be determined by wildlife biologist	May 1 – June 30

- If sharp-shinned hawk, Cooper's hawk or goshawk nests are discovered during layout, then temporary road construction would be located outside of nest stands (LRMP WL-27, 18, and 10). A Cooper's hawk nest is currently located in Unit 4045, which is proposed for fuels only treatment in Alternatives C, D, and E. An appropriate buffer would be identified by the District Wildlife Biologist prior to treatment, as described below.

- If a sharp-shinned hawk, Cooper's hawk, or goshawk nest is discovered during project layout, a forested stand of at least 10 acres would be retained for sharp-shins (LRMP WL-25), 15 acres for Cooper's (LRMP WL-17), and 30 acres for goshawks (LRMP WL-9). A Cooper's hawk nest is currently located in Unit 4045, which is proposed for treatment in Alternatives C, D, and E. If a goshawk nest is discovered, seasonal restrictions on activities near the nest would be required for activities that may disturb or harass the pair while bonding or nesting. Thirty (30) acres of the most suitable nesting habitat surrounding the nest would be deferred from harvest. A 400-acre post fledgling area (PFA) would be established. While harvest activities can occur within this area, the prescription would retain LOS stands and enhance younger stands towards LOS conditions, if possible (Interim Wildlife Standard Scenario A, 5).

- If a great gray owl nest is discovered during Rim-Paunina layout, a forested stand of at least 30 acres would be maintained around the nest site (LRMP WL-31).

- Active red-tailed hawk nests would be protected by maintaining the forested character of the area at least 300 feet in radius around the nest. Timber management may occur within this area, but must maintain an average of four dominant overstory trees per acre suitable for nest and perch trees. Ponderosa pine would be favored where available (LRMP WL-2). Currently, the following units are known to contain, or are within a ¼ mile of a red-tailed hawk nest. These nests sites would be assessed for activity before proceeding with activity in a unit:

  Alternative B: 5, 6, 665, 685, 690, 775, 800, 805, 875, 876, 880, and 945
  Alternatives C, D, and E: 5, 6, 665, 685, 690, 775, 800, 805, 875, 876, 880, 905, 930, 945, 3005, 3010, 3020, 3025, 4025, 4030, and 4035

- To protect potential bat habitat, restrict all project activities (such as timber harvest, vegetation removal and underburning operations) on lava pressure ridges greater than or equal to 100 square feet in size.

- All rock outcroppings and lava pressure ridges greater than 100 square feet found during unit layout would have directional felling and restrictions for mechanized equipment to protect potential bat roosting and maternity areas.

Wildlife/Snags

- All existing snags (any species) would remain except where snags must be felled for temporary and Maintenance Level 1 roads, log landings, or occupational safety. Harvest operations would be designed to avoid snags by locating skid trails and landings away from them, where possible. If snags need to be felled, they are to be retained as down wood. Felled snags may be moved off roads and landings, but not removed from the site. In addition, mistletoe infection and resultant mortality is expected to provide snag recruitment in many places across the Rim-Paunina analysis area. In stands currently below desired snag levels () as determined by pre-sale tally, sufficient live trees would be retained to create snags. Note: These levels exceed minimum requirements specified in the Eastside Screens.

Table 2. Minimum Snag Levels to Determine Snag Creation

Location	PAG[3]	Snag Densities and Diameters
East of the NSO Line	PP	2.25 snags/acre > 15" dbh with 0.14 snags/acre > 20" dbh
	MC	2.25 snags/acre > 15" dbh with 0.14 snags/acre > 20" dbh
	LP	1.80 snags/acre > 10" dbh with 0.59 snags/acre > 20" dbh

Wildlife/Down Wood

- Down wood requirements in all units except areas of potential firewood: The intent is to retain existing levels of down wood nine inches dbh and greater in all Plant Association Groups[4]. Only activity-created slash below these maximum diameters would be piled and utilized or disposed. Retain 2-3 piles per acre. Minimum pile size is 15 feet by 15 feet by 10 feet in grapple pile units. The minimum pile size is 6 feet by 6 feet by 4 feet in handpile units. This requirement can be waived if site-specific monitoring determines adequate levels of down wood are met in all units regardless of location (). While retaining down wood in place is preferred, it is recognized that some manipulation may be needed to meet stand prescription objectives. In all units, down wood may be manipulated (shifted, clumped, grouped, driven over, etc.) only as necessary to meet objectives. In all units, if sufficient size classes are not present, then the largest available down logs would be substituted.

- In Units 80 and 85 only, down wood may be removed to facilitate meeting stand prescriptions; however, there would be high-density patches left in pockets to approximate densities per .

- Wherever possible, cull material greater than or equal to nine inches in diameter would be retained in the unit and not moved to landings.

- Live trees not intended for removal but damaged during vegetation management activities would remain standing if they do not pose a safety risk to forest workers. If they are felled, they would remain on site and retained for down wood.

[3] PP= ponderosa pine, LP = lodgepole pine, MC = mixed conifer

[4] Minimum down wood requirements are Plant Association Group specific for dependent wildlife species.

Table 3. Minimum Down Wood Levels

Species	Tons per Acre	Diameter Small end	Whole Tree Equivalent	Percent Cover
Lodgepole Pine	7-42	8 inches	17-105 Whole Trees 8-12 inches in diameter	2.6-15.9
Stands Dominated by Ponderosa Pine	12-23	9 inches	11-16 Whole Trees 16-22 inches in diameter	2.8-5.2
Ponderosa Pine Stands Where Lodgepole Pine Comprises Most Down Wood	Not specified in this plant association	9 inches	8-10 Whole Trees Largest LP on Site Plus Retain all Other Species	0.1-0.3 in lodgepole
Mixed Conifer	11-42	9 inches	11-38 Whole Trees 16-22 inches in diameter	2.6-10

Personal Use Firewood

- Requirements in areas of potential firewood: Meet or exceed minimum levels specified in and .
- No snag falling by firewood cutters would be allowed in personal use firewood areas.
- Firewood units would be subject to the same seasonal restrictions as the timber and fuels units (ie. calving/fawning, raptor closures) in .

Potential Firewood Units

Alternatives B, C, D: 10, 15, 20, 155, 160, 166, 190, 370, 385, 425, 430, and 870
Alternative E: 15, 20, 150, 155, 160, 166, 190, 370, 385, 425, 430, and 870

- Personal use and/or commercial firewood removal would not be permitted within designated Old Growth Management Areas that overlap unit: 620, 650, 690 and 895.

Table 4. Deschutes National Forest Plan Standards for Down Wood in Potential Firewood Units

East of the NSO Range Line (Eastside Screens)				
Vegetative Series	**Pieces per Acre**	**Diameter Small End**	**Piece Length**	**Total Lineal Length**
PP	3-6	12"	>6 feet	20-40 feet
MC	15-20	12"	>6 feet	100-140 feet
LP	15-20	8"	>8 feet	120-160 feet

Slash Disposal/Prescribed Burning Operations

- Slash disposal using prescribed fire would be accomplished during the cool and moist seasons of spring and fall.
- Prescribed burning would be accomplished in a mosaic pattern across the landscape with unburned areas within the burn, in addition to unburned designated leave areas, with the goal of leaving at least 25 percent shrub cover.
- To maintain a quality camping and hunting experience, during the green dot road closure period associated with two-week rifle deer season, prescribed burning would be suspended in the immediate vicinity of designated campgrounds, including Boundary Springs.
- To concurrently meet wildlife objectives for retention of larger dead wood and fuel objectives for reduction of large fire risk, burn prescriptions and fuels moistures should be such that snags

greater than 15 inches in diameter and down wood greater than 12 inches in diameter at the large end would be protected. It is assumed that reduction of snags and down wood less than nine inches is most effective in reducing rate of fire spread. Grapple and hand piles would not include material greater than nine inches in all plant associations, instead it would be retained.

- If snag and down wood diameters do not meet objectives within a unit, the largest material available would be retained. Within the Eastside Screens, fire prescription parameters would ensure that consumption does not exceed three inches total (1.5 inches per side) in featured log sizes in (Interim Direction Scenario A, 4a(2).

- Burning operations would be utilized to create snags, where deficiencies occur.

- In order to reduce risk to motorists from reduced visibility as a result of fuel hazard abatement activities, the preferred methods for disposal of slash directly adjacent to the highways would include hauling piles away or mastication (e.g. "slash busting").

- Prescribed fire managers would use smoke management forecasts in order to minimize smoke from fuels reduction activities from entering into places where smoke is undesirable, including Class 1 airsheds and designated areas, as well as sensitive wildlife habitat areas such as spotted owl nesting habitat and potential bat roosting areas.

- Smoke from application of prescribed fire has the potential to overlap the designated motorized trail system from the Three Trails OHV Project. In order to minimize potential exposure and maintain a positive rider experience, utilize public contact and sign affected trail systems and staging areas. If application of prescribed fire directly overlaps a portion of the main trail system, then that system would be closed until the prescribed maintenance burning has been completed.

- Within and adjacent to units with rock outcroppings and/or lava pressure ridges that provide bat habitat, all prescribed burning would be seasonally restricted to the fall months when bats are more fit and able to survive potential disturbance associated with smoke. A district wildlife biologist would also determine buffer distances which may range from 50-300 feet based on site-specific conditions such as fuel loadings and topography.

Cultural Resources

- Provide a 30 meter (100 foot) buffer for 12 identified cultural resource sites located within treatment units. No project activities will occur within the buffer.

- Pre-treat fuels (brush removal by hand) within the 30 meter (100 foot) buffer for seven of the 12 identified cultural resource sites. No project activities, except the brush removal, will occur within the buffer.

- In the event that previously unknown sites, cultural artifacts, or features are discovered during project implementation, they would be flagged and operations in the area avoided until the archaeologist can review the site.

Botany

- Known sites of pumice grape-fern would be flagged for avoidance prior to equipment work within the following treatment units for all action alternatives: 655, 680, 755, 795, 796, 800, 805, 815, 820 and 870. No equipment or vehicles would be staged within these flagged areas to protect the pumice grape-fern plant.

Invasive Plant Species

The Region 6 Invasive Plant Final Environmental Impact Statement (FEIS) Record of Decision (ROD) (USDA Forest Service, 2005) amended the Deschutes LRMP, adding additional standards for invasive plant prevention and control. Prevention would be emphasized as the preferred strategy for invasive plant management by adhering to Regional Standards as adopted by central Oregon Forest Plans. The following identifies which standards apply to this project.

- Actions conducted or authorized by written permit (contracts) that operate outside the limits of the road prism, require clean equipment (i.e., bulldozers, skidders, other logging equipment) prior to entering National Forest System Lands or moving into a new or different analysis area. Remove mud, dirt, and plant parts from all heavy equipment that will operate outside the limits of the road prism prior to entering NFS lands AND before moving into a new or different analysis area. Cleaning must occur in areas where removed weed seeds will not create additional problems. *Requirement R6 Standard #2.*

- Inspect active gravel, fill, sand stockpiles, quarry sites, and borrow material for invasive plants before use and transport. Treat or require treatment of infested sources before any use of pit material. Use only gravel, fill, sand, and rock that are judged to be weed free by District or Forest weed specialists. There are no activities, including road reconstruction planned within the analysis area that requires rock from a quarry. *Requirement R6 Standard #7*

- Require all Forest Service employees to inspect, remove, and properly dispose of weed seed and plant parts found on their clothing and personal equipment prior to leaving a project site infested with weeds. *Guideline*

- Conduct road blading, brushing, and ditch cleaning in areas with high concentrations of invasive plants in consultation with District or Forest-level invasive plant specialists, incorporate invasive plant prevention practices as appropriate (road maintenance and re-opening roads).

Recreation

- To maintain a quality camping and hunting experience, during the green dot road closure period associated with two-week rifle deer season, harvest operations would be suspended in the immediate vicinity of the Boundary Springs campground, including Unit 640.

- During deer rifle hunting season, all hauling associated with timber harvest would honor agreements with the green dot system and access management restrictions for motorized vehicles.

- In dispersed campsites, to maintain the recreation experience, forest management activities would minimize change to the setting by retaining the largest trees onsite and locating landings, skid trails, and soil activities away from the campsite.

- Protect temporary bollards and trail signs needing to be removed from closed roads to access timber sale activity.

- For rider safety all OHV trails and roads would be closed and posted during timber harvest activities in areas where Three Trails OHV implementation and the Rim-Paunina project overlap.

- To limit disturbance by mechanized equipment to designated OHV trails in harvest units, skid trails, temporary roads, and other crossings would be approved by the Forest Service prior to use.

- To maintain a safe and quality recreation experience for those recreating or using dispersed camp sites in the Walker Mountain area, the following design features related to prescribed burning would be incorporated:

    - Sign Boundary Springs campground, motorized trails at appropriate locations, and at staging areas.
    - Utilize the physical presence of field rangers at key locations, especially during firing and mop-up phases.
    - Utilize public notification in media, the Forest Service Web Portal, the COHVOPS website, and other appropriate venues such as organized motorized vehicle clubs.
    - Warning signs would be posted at prominent road junctions to inform the public of prescribed burning operations, and would remain in place until there is no visible smoke. If feasible, roads and trails may be temporarily closed for the protection of public safety.
    - As part of the plan to inform the public, notify local businesses prior to the burning season and on the day of planned prescribed burning operations. Also, notify adjacent landowners of burning operations conducted in units within ¼ mile of their property.
    - Coordinate with appropriate partners, such as the Oregon Department of Fish and Wildlife to incorporate information regarding prescribed burning operations in publications such as the hunting regulations and hunter booth hand outs.
    - Prescribed burning operations are generally discouraged during rifle season and overlapping high visitation weekends such as Memorial Day and Fourth of July.

Air Quality

- Reduce particulate emission through utilization to the extent practical (i.e. pulling trees to the landing with limbs attached and biomass utilization versus prescribed burning).

- The objective is to minimize human-caused visual impacts to the Class 1 airsheds. Prescribed burning operations would be restricted during the period of July 1 – September 15th. Also, prescribe burn operations to dissipate smoke away from the Class 1 airshed (i.e. burn during forecasted westerly winds).

- Adhere to the State of Oregon Smoke Management Plan in regulation of cumulative daily smoke outputs

Mitigations Common to All Action Alternatives

The following mitigation measures are an integral part of each of the action alternatives. These are different from Project Design Features in that they are typically tied to a specific unit and they are used to avoid, minimize, rectify, reduce, or compensate an impact (40 CFR 1508.20). They are listed here separately to avoid repeating them in each alternative description.

The effectiveness of each measure is rated at high, moderate, or low to provide a qualitative assessment of how effective the practice would be in preventing or reducing resource impacts. These mitigation measures and design elements are considered in the effects discussions of Chapter 3.

Effectiveness ratings of High, Moderate or Low are based on the following criteria: a) Literature and Research, b) Administrative Studies (local or within similar ecosystem), c) Experience (judgment of qualified personnel by education and/or experience, d) Fact (obvious by reasoned, logical, response).

High: Practice is highly effective (greater than 90 percent), meets one or more of the rating criteria, and documentation is available.

Moderate: Documentation shows that practice is 75 to 90 percent effective; or logic indicates that practice is highly effective, but there is no documentation. Implementation and effectiveness of this practice needs to be monitored and the practice would be modified if necessary to achieve the mitigation objective.

Low: Effectiveness is unknown or unverified, and there is little or no documentation; or applied logic is uncertain and practice is estimated to be less than 60 percent effective. This practice is speculative and needs both effectiveness and validation monitoring.

Vegetation Management

1. Within all mapped wildlife connectivity corridors site-specific field reconnaissance would be performed by a wildlife biologist, silviculturist, and fuels specialist to determine appropriate treatments and maintain consistency with Regional Forester's Amendment #2 Eastside Screens. For details, reference Connectivity and Fragmentation in the Wildlife section, Chapter 3. *High*

Soil and Water Quality

1. To achieve acceptable productivity potential following land management activities (Forest Plan page 4-70, SL-1 and SL-3), Guidelines (FSM 2500, R-6 supplement 2500-98-1), Forest Service Region 6 Supplement 2520.3 – Policy, use subsoiling to relieve compacted soils, if monitoring shows detrimental conditions. Currently there are no units estimated to require subsoiling after management activities. *High*

Table 5. Connectivity Corridor Acres by Alternative

Unit	Alt B	Alt C	Alt D	Alt E
25	2.2	2.2	2.2	2.2
45	6.0	6.0	6.0	6.0
50	0.2	0.2	0.2	0.2
60	30.0	30.0	30.0	30.0
70	5.0	5.0	5.0	5.0
115	6.1	6.1	6.1	6.1
120	7.9	7.9	7.9	7.9
125	2.2	0.0	0.0	2.2
130	2.3	0.0	0.0	0.0
135	17.8	17.8	17.8	17.8
140	0.5	0.5	0.5	0.5
145	3.4	3.4	3.4	3.4
180	2.8	2.8	2.8	2.8
185	0.1	0.1	0.1	0.1
195	0.8	0.8	0.8	0.8
205	1.1	1.1	1.1	1.1
240	3.6	3.6	3.6	3.6
255	6.9	6.9	6.9	6.9
290	0.5	0.5	0.5	0.5
300	2.6	2.6	2.6	2.6
305	8.1	0.0	0.0	0.0
335	0.4	0.0	0.0	0.0
385	0.5	0.5	0.5	0.5
390	2.0	2.0	2.0	2.0
395	1.1	0.0	0.0	0.0
405	4.3	4.3	4.3	4.3
430	6.2	6.2	6.2	6.2
435	3.4	0.0	0.0	0.0
605	1.4	1.4	1.4	1.4
610	2.2	2.2	2.2	2.2
645	25.6	25.6	25.6	25.6
660	9.2	9.2	9.2	9.2
665	25.7	25.7	25.7	25.7
675	0.3	0.0	0.0	0.3
685	1.5	1.5	1.5	1.5
690	2.5	2.5	2.5	2.5
700	1.7	1.7	1.7	1.7
710	1.4	1.4	1.4	1.4
730	2.1	2.1	2.1	2.1
735	2.5	2.5	2.5	2.5
740	0.8	0.0	0.0	0.8
745	1.2	0.0	0.0	1.2
750	7.8	7.8	7.8	7.8
755	3.0	3.0	3.0	3.0
765	5.9	5.9	5.9	5.9
785	9.0	9.0	9.0	9.0
795	2.6	2.6	2.6	2.6
796	4.5	4.5	4.5	4.5
820	4.9	4.9	4.9	4.9
830	8.3	8.3	8.3	8.3
850	2.4	2.4	2.4	2.4
855	2.5	2.5	2.5	2.5
865	2.2	2.2	2.2	2.2
870	1.0	1.0	1.0	1.0
875	8.8	8.8	8.8	8.8
876	4.4	4.4	4.4	4.4
880	4.0	4.0	4.0	4.0
885	2.5	2.5	2.5	2.5
940	13.5	13.5	13.5	13.5
945	6.4	6.4	6.4	6.4
965	0.2	0.2	0.2	0.2
TOTAL	**300**	**280.2**	**280.2**	**284.7**

Wildlife

1. To minimize disturbance to deer and elk during fawning/calving season. A limited operating period would be applied to activities near water sources during the period of May 1 through June 30. This measure would reduce the disturbance to mule deer does and elk calves during the fawning/calving season and lessen the potential of fawn/calf abandonment and/or mortality during the critical time period. The ability to implement and the efficacy of this measure is considered *High* forest-wide. The seasonal restrictions on prescribed burning, timber sale activities and pre-commercial thinning would be applied to the following treatment units:

   Alternative B: 5, 6, 25, 195, 205, 225, 275, 385, 621, 665, 785, 825, and 1065
   Alternatives C and D: 5, 6, 25, 195, 205, 225, 275, 385, 615, 621, 625, 665, 785, 825, 1065, 3005, 3055, 3060, 3065, 3095, 4000, 4005, and 4095.

Alternative E: 5, 6, 25, 195, 205, 225, 275, 385, 615, 621, 625, 665, 785, 825, 1065, 3005, 3055, 3060, 3065, 3095, 4000, 4005, and 4095.

2. If requested, waivers may be considered if surveys are conducted and determine deer and/or elk are not present in individual units during the calving/fawning season. *High*

3. Within units 275, 665, 785, 825, 1065, and 4095, maintain a minimum six acre unthinned clump centered on the following guzzlers: South Paunina #2, Crescent Siding, #248, Marmot Butte, South End, and South Paunina #3. Commercial timber harvest, pre-commercial thinning, and prescribed underburning would not be permitted within the six acre no treatment clump. Approximately four acres of unit #390 surrounding the Paunina #4 guzzler would be underplanted with sugar pine and/or lodgepole pine trees to develop future big game hiding cover. No underburning in unit #390 would be permitted to retain the hiding cover currently present. This measure is intended to provide and maintain big game hiding cover near developed water sources. This mitigation applies to all Action Alternatives; B, C, D, and E. *High*

4. The following units would have retention areas that exceed the fifteen percent previously mentioned in the Project Design Features description. There are several reasons for the increased level of no treatment retention areas. Several subwatersheds have low levels of hiding cover and additional retention allows increased size of cover blocks and better distribution across the project area. Wherever possible, retention blocks would meet the definition of hiding cover and be placed adjacent to roads and trails open for motorized use. The presence of wildlife connectivity corridors, cultural heritage sites, large rock outcrops, developed water sources, sensitive plant sites, or other resource concerns are also reasons for increased amounts of no treatment areas. *High*

   Alternative B: 15% all units
   Alternatives C and D: units with 20% retention: 265, 410, 430, and 510
   Alternatives C and D: units with 25% retention: 5, 25, 40, 45, 70, 80, 90, 120, 140, 195, 775, 3005, 3010, and 3020
   Alternative E: units with 20% retention: 265, 410, 430, and 510
   Alternative E: Units with 25% retention: 5, 25, 40, 45, 70, 80, 90, 120, 140, 195, 290, 390, 615, 775, 3005, 3010, and 3020

Recreation

1. Harvest operations and haul routes would be restricted in the following units to protect access and quality of winter snowmobile trails and to maintain safety of users. Seasonal restrictions for harvest operations accessed by Forest Service roads 5835 and 5840 would be in place between December 1 and March 31, unless agreed otherwise depending upon snow conditions. *High*
   a. **Alternatives B and E:** 195, 205, 215, 220, 240, 255, 265, 270, 275, 285, 286, 290, 295, 300, 310, 345, 350, 465, 470, 480, 490, 495
   b. **Alternatives C and D: 195,** 205, 240, 255, 265, 275, 285, 286, 290, 295, 300, 345, 350, 355, 465, 470, 490, 495, 510

2. The following Rim-Paunina units would require coordination between the fuels specialist, presale specialist, timber sale administrator, and the Central Oregon Combined Off-Highway Vehicle Operations (COHVOPS) trail specialist to ensure adequate buffer and/or 'pivot'

trees, as needed to maintain OHV trail integrity for the Rivers South trail area of Three Trails OHV Project implementation that overlaps the Rim-Paunina Project area. *Moderate*

a. **Alternative B** Harvest units: 180, 235, 250, 260, 385, 390, 400, 410, 415, 430, and 445
b. **Alternatives C and D** Harvest units: 180, 235, 250, 260, 385, 390, 400, 410, 430, and 445; and 'fuels only' units: 3095, 4065, 4070, 4075, 5005, and 5010.
c. **Alternative E** Harvest units: 180, 235, 250, 260, 385, 390, 400, 410, 415, 430, and 445; and 'fuels only' units: 3095, 4065, 4070, 4075, 5005, and 5010.

3. The following Rim-Paunina Units would require coordination between the fuels specialist, presale specialist, timber sale administrator, and the Central Oregon Combined Off-Highway Vehicle Operations (COHVOPS) trail specialist to ensure adequate buffer and/or 'pivot' trees, as needed to maintain OHV trail integrity for the Three Trails OHV 10-mile loop trail: *Moderate*
   a. **Alternative B** Harvest units: 255, 265, 275, 310, 345, 355,
   b. **Alternatives C and D** Harvest units: 255, 265, 275, 345, 355, and 'fuels only' units: 3075, 3080, 4080, 4085, and 4095.
   c. **Alternative E** Harvest units: 255, 265, 275, 310, 345, 355, and 'fuels only' units: 3075, 3080, 4080, 4085, and 4095.

4. The following Rim-Paunina Units would require coordination between the fuels specialist, presale specialist, timber sale administrator, and the Central Oregon Combined Off-Highway Vehicle Operations (COHVOPS) trail specialist to ensure adequate buffer and/or 'pivot' trees, as needed to maintain OHV trail integrity for the Three Trails OHV Walker Mountain area trails: *Moderate*
   a. **Alternative B** Harvest units: 870, 940, 1025, 1030, 1060, 1065, 1070, 1085, 1090, and 1096
   b. **Alternatives C, D, and E** Harvest units: 870, 940, 1025, 1030, 1060, 1065, 1070, 1085, 1090, and 1096, and 'fuels only' units: 4050, 4060, 5015, 5020, 5025, and 5030.

Scenery along Highways 58 and 97

1. Timing of cleanup along Highways 58 and 97 would occur two years following activity in units:
   Forest Plan Standard and Guideline M9-8 and M9-58. *High*
   a. **Alternative B:** 70, 115, 145, 430, 865, and 870
   b. **Alternatives C, D, and E:** 70, 115, 145, 430, 865, 870 and 3015

2. Design skid trails and landings to minimize visibility. Landings closer than 200 feet would be approved on a case by case basis. During on-the-ground layout of skid trails take advantage of vegetation screening and topography and where possible run skid trails perpendicular to the highway to minimize visibility. Forest Plan Standard and Guideline M9-4 and M9-57. *High*

3. Following implementation of all harvest and post sale operations, the objective is to have no visible marking paint to visitors on the roadway. After activities are completed, remove tags, ribbons, boundary signs and other means of designating activity. Forest Plan Standard and Guideline M9-4 and M9-57. *High*